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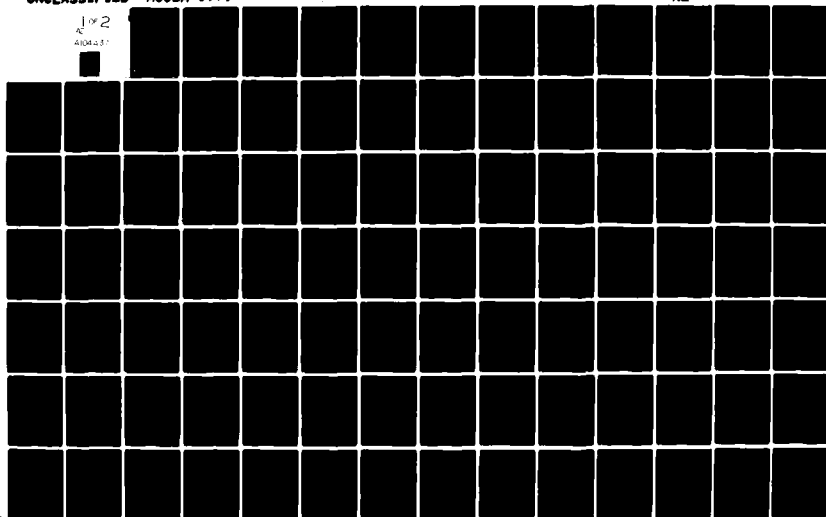
MULTNOMAH COUNTY OFFICE OF EMERGENCY MANAGEMENT POR--ETC F/S 13/12  
HAZARDOUS MATERIALS MANAGEMENT SYSTEM. A GUIDE FOR LOCAL EMERGE--ETC(U)  
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July, 1981

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# **HAZARDOUS MATERIALS MANAGEMENT SYSTEM A GUIDE FOR LOCAL EMERGENCY MANAGERS**

By  
**Myra T. Lee  
Penelope G. Roe**

for  
**Federal Emergency Management Agency  
Washington, D.C. 20472**

**Contract No. DCPA01-79-C-0323 Work Unit 4521E  
James W. Kerr, COTR**

**Approved for Public Release  
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Multnomah County Office of Emergency Management  
12240 N.E. Glisan, Portland, Oregon 97230

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July, 1981  
Final Report

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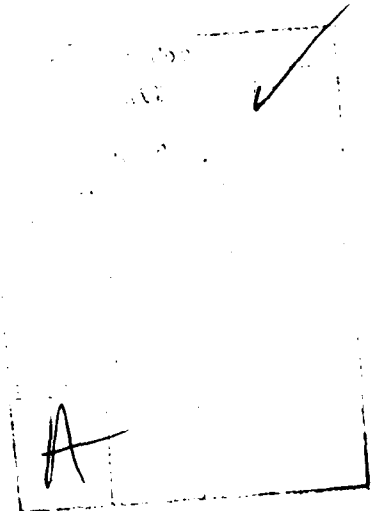
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and clean up. This manual has been written to help in the development of a total Hazardous Materials Management System. The manual describes one approach but allows for variations as may be appropriate for the specific jurisdiction.

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## DETACHABLE SUMMARY

This project is the result of a proposal submitted by Multnomah County, Oregon, Division of Public Safety, Office of Emergency Management, for the development of a Hazardous Materials Management System. The overall goals of the project were to reduce the number of hazardous materials incidents that occur in Multnomah County, mitigate the effects of those that do occur, and improve the effectiveness, efficiency, and safety of the county efforts to deal with these incidents. In accordance with these general goals, the specific objectives were established for the project as follows:

Task: Conduct a risk analysis to measure the magnitude and nature of the county's exposure to hazardous materials incidents and to identify those hazardous materials most likely to be encountered in the area.

Methodology: It was felt that there was limited expertise within the agencies involved to adequately address the problem. Therefore, a decision was made to sub-contract with an organization having demonstrated experience in such activities. The result provided the basis for data collection and analysis and has been incorporated as a maintenance element within the system.

Task: Conduct a resource inventory to identify and organize the resources available to the county, for both internal and external sources, for dealing with hazardous materials incidents.

Methodology: Materials were gathered from various sources identifying organizations, equipment, supplies, and manpower necessary or mandated to respond to hazardous materials incidents. This information was categorized and cross referenced then added to the resource inventory system.

Task: Develop a hazardous materials technical information system, having three major components:

- (a) A comprehensive library of pertinent reference books, reports, manuals, and other documents.
- (b) A manual system of forms and procedures for recording, storing, and analyzing information about actual hazardous materials incidents in the county.
- (c) A simple computerized information retrieval system, capable of accessing remote data bases of general hazardous materials reference information, and a local data base of information specific and unique to Multnomah County.

Methodology: The components of the technical information system were individually addressed:

- (a) A search was conducted to identify sources of information. Starting with those that are well known, the network of information sources rapidly expanded as each source was able to provide additional avenues to search. A comprehensive list was then organized which continues to be added to.



- (b) During the project development, forms were gathered that had been utilized by other responding agencies. These were tested on actual alerts and incidents and later analyzed in relation to the adequacy and usefulness of the information being requested. From that analysis draft forms were prepared and tested with the final resulting system expected to provide valid data for continued planning activities.
  
- (c) This portion of the information system was sub-contracted to technical experts for the development of both the hardware and software design. Although it is recognized that additional refinement will occur as the "state of the art" progresses, the system appears to satisfactorily meet the current needs for product and response information.

Task: Establish a hazardous materials incident prevention program, with legal enforcement, industrial relations, and public relation components similar to those of fire prevention programs.

Methodology: Contacts were made with agencies that have a response or investigative responsibility and with the businesses and industries that handle hazardous materials. Emphasis was placed on the need for adequate and appropriate handling of hazardous materials as well as response plans and coordination of activities. Requests for training have been met by providing workshops, and basic and intermediate training courses.

**Task:** Establish equipped initial response units as a joint venture of Multnomah County Fire District #10, Multnomah County Office of Emergency Management and the Division of Public Safety.

**Methodology:** The few existing response units on which information was available were reviewed and their capabilities compared with the needs and objectives as identified for this geographic area. Based on this information, a determination was made regarding the type of vehicle; type and quantity of equipment and supplies; essential manpower; and communication requirements. Since this was a multi-agency project the final product reflects the requirements of all responding parties and represents a comprehensive approach to the technical operations.

**Task:** Establish a hazardous materials training program, based primarily on the coordination of the existing training courses.

**Methodology:** It became clearly evident even before the project began that training programs were being developed all across the nation. It was difficult to know exactly what the training needs were, therefore, two of the more prominent programs were attended. An experimental DOT course was presented in Multnomah County on a pilot basis and an instructor from Tennessee was contracted to present two weeks of instruction to first responders from both Oregon and Washington. The course has been further refined and

will be an annual event open to personnel from both government and industry. There are plans to conduct additional courses on specialized subject matter that is relevant to the local program. All the above activities have been covered in a "Hazardous Materials Management System Guide" which is intended to provide a structured plan of action. It must be adapted to the needs within a specific, defined geographic area and based on the degree of hazard and the available resources.

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## ACKNOWLEDGEMENTS

As in every work of this kind, there are numerous people who contribute to the final product. No one person can generate a valid document that fulfills the needs of the various disciplines. This guide is certainly no exception. It was conceived and nurtured by a variety of dedicated persons, all of which cannot be adequately thanked or acknowledged here. However, the following people were exceptional in their unwavering support and good nature in the face of numerous frustrations and setbacks, and were tenacious in seeing the project through to completion.

I would like to thank Clifford McLain and Helain (Lanny) Elderkin for providing the opportunity to realize a dream; to Fred Pearce for allowing the freedom to "do it my way" and to make my own mistakes; to Penny Roe, Len Malmquist and Brian Reynolds for their combined knowledge, expertise, and attention to detail; and last but not least to the Division of Public Safety Word Processing Unit that put up with the numerous proofings, changes, and requirements for perfection. Without these people I would not have been able to present to you what I believe will enhance the ability of an Emergency Manager to provide an integral element of a comprehensive Emergency Management system.

MYRA LEE, Manager

Office of Emergency Management

July, 1981

PREFACE

## PREFACE

This guide is one of the products that resulted from a proposal that was initially funded by the Defense Civil Preparedness Agency (which was later incorporated into the Federal Emergency Management Agency). The Multnomah County Office of Emergency Management was fortunate enough to be the recipient of funds that came at a time when local resources were severely limited and problems relating to the handling of hazardous materials incidents were beginning to surface in ever increasing numbers all across the nation.

One of the objectives for the project was to optimize the available funds for the good of the community as a whole. In order to realize this objective it has been essential to generate coordination and cooperation as a multi-disciplinary and multi-jurisdictional effort. While many problems surfaced, the project has ultimately been a satisfying and productive process that has proved beneficial to all agencies directly involved as well as others that participated peripherally by attending training sessions, evaluating response activities, offering advice and assistance, or donating equipment and supplies.

It is recognized that by the time the concept of a systems approach for hazardous materials management sweeps the country in the near future the system which was implemented under this project contract will probably be relatively obsolete. The system will continue to be effective but better more efficient methods and technology will be developed as business, industry, and government personnel become more aware of their individual roles and responsibility for mitigation, response, and recovery.

INTRODUCTION



## INTRODUCTION

### Purpose

The purpose for the development of this handbook is to provide a tangible guide to the local emergency manager for the development and implementation of a comprehensive system approach for dealing with hazardous materials incidents within a specific geographic area. It was written from the perspective that such a system is multi-disciplinary in nature and therefore it is essential that those involved identify, understand, and accept their individual roles within the concept of a team effort. The role of the local emergency manager is that of directing and coordinating developmental activities, monitoring the implementation of the system, and subsequently, to test and evaluate its progress. The roles of initial response, clean up, investigation, and regulatory enforcement are most appropriately handled by the public and private agencies with the technical expertise and mandated authority to do so.

### Process

The planning process may be the most beneficial phase of system development in terms of a positive learning experience. It is during this period of time that enthusiasm is high, support is forthcoming from local officials, and the basis for continuing cooperation can be established.

Usually when a project such as this, relating to a specific contingency or function, elicits the involvement of a number of agencies, there is a question as to which one will act as the lead agency. The parochialism inherent in such an effort can be overcome if all participants take a critical and objective look at what their agency role really is and how it functions as an integral element of the "system".

There are arguments for and against various personnel and positions which could adequately and efficiently handle this function. However, that point is not argued here. The rationale for writing this guide for the local emergency manager is that a specific responsibility of emergency managers is to help other agencies and divisions of local government do their job better. This can be accomplished through inter-agency coordination which is a primary and essential activity of every emergency management program on all government levels throughout the nation. The emergency manager must clearly identify the major tasks that need to be organized in accordance with personnel, time, and funding, monitor the progress of the project and minimize, to the extent possible, delays, problems, and barriers which may be encountered.

### Limitations

While the term "hazardous materials" as used here has a broad connotation it refers primarily to commodities rather than hazardous wastes. Much of the equipment and many of the safety measures for responding to a hazardous material incident could also be used for hazardous waste incidents. However, there are some unique characteristics related to the handling of hazardous waste and the authority to enforce regulatory statutes that are not dealt with in this guide.

## DISCUSSION OF THE PROBLEM

An increase in the manufacture, storage, and transportation of hazardous materials is occurring across the nation. Local jurisdictions have realized that they have the responsibility to assure a reasonable level of safety to their community members and visitors alike. Such a responsibility can be met by developing methods of preventing hazardous materials incidents; enforcing laws related to transporting and storing hazardous materials; the initiating of an appropriate first response, and activating available resources of government agencies and commercial organizations that deal with containment and clean up.

In most instances there are a number of factors that may hamper local government efforts to meet these responsibilities. The following are primary problem areas that are addressed in this handbook:

### Lack of Information About the Hazard

There are few communities that have any organized source of information about the identity and location of the major hazardous materials manufacturing, storage, transfer, and distribution facilities or the quantities, types, schedules, and routes of shipment of these materials into, out of, through, and within a geographic area. Any jurisdiction wishing to specifically identify the extent of their problem should conduct a hazard analysis that provides this information.

## DISCUSSION OF THE PROBLEM

### Lack of Information About Resources

Another of the weak links in emergency management programs of local government seems to be the lack of information related to identification, location, availability, and access to resources that can be used for mitigation, response, and recovery from an emergency situation. Dealing with hazardous materials incidents is no exception. Although resources for such activities are available through local, state, federal, and private agencies, there is generally no central source of information which identifies all of the resources, describes their capabilities, or provides for their coordinated use. All of this information is essential in a comprehensive emergency management system and can be obtained by conducting a survey of business, industry, labor, and government agencies.

### Lack of Tactical Information

There is a need for access to accurate and comprehensive information about the characteristics and effects of specific hazardous materials (of which there are thousands). Procedures for dealing with them are limited due to the fact that local government has had relatively little experience with or exposure to such incidents. There is no central source of detailed historical

information about hazardous materials incidents that have occurred in the past and few if any systems have been developed for capturing such information in the future. The development of an information retrieval system which is directly related to the identified risk in a specific geographic area is imperative in order to optimize the ability of the responders to protect their own lives as well as those of persons near the hazard. Additionally, it should provide enough information to the response personnel to make knowledgeable decisions related to containment, control, and cleanup, particularly if there is no commercial organization readily available to handle it.

#### Lack of Response Capability

Local government has law enforcement and fire service agencies which are generally well prepared and equipped for dealing with most ordinary and many extraordinary types of incidents. However, there remains a requirement for local government to be specifically prepared for initial response, assessment, and control of hazardous materials incidents that would affect the jurisdiction, in order to carry out their legal mandate to protect lives and property, and to stay alive in the process. In order to do so they need to have appropriate information, equipment, and supplies readily available for this purpose.

### Lack of Training

Hazardous materials training courses are available to local response personnel in many forms and from many sources . However, they are seldom organized into a coordinated overall program which clearly defines goals and objectives designed to meet local needs. Local government often lacks the ability and the funds to conduct in-house training programs of this type. Since hazardous materials incidents are a universal and costly problem it behooves both the public and private organizations to pool their training resources and to conduct training programs that are regional in scope and specifically related to the types of materials that constitute the greatest risk to a specific area.

### Lack of Prevention Capability

There is a need for review and possible strengthening of a local government's hazardous materials law enforcement efforts and for clarification of the legal environment in which an enforcement program operates. This is an element that becomes even more essential as new laws are enacted by local, state, and federal agencies, some of which have resulted in conflicts between different levels of government and the public and private sector. The

problem proliferates in direct proportion to the increase in agencies designated or claiming a primary responsibility for control of hazardous materials and waste substances. Additional regulations and requirements placed on business and industry seem also to have resulted, in some areas, in a decrease in cooperation between public and private organizations. This emphasizes the need for a well organized industrial and public relations effort aimed at information exchange and incident prevention measures.



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## ORGANIZATION OF TASKS

## ORGANIZATION OF TASKS

The multi-disciplinary nature of hazardous materials response dictates the active involvement of those with specific technical expertise throughout the entire planning, development, and implementation of a hazardous materials management system. There are many ways to effect such involvement however, the one proffered by this guide is the establishment of a small Technical Advisory Committee (TAC) consisting of representatives from police, fire, and emergency management. This group can serve both in an advisory capacity to the emergency manager and as an operational group to carry out the activities identified in the following task descriptions.

TASK ONE  
HAZARD ANALYSIS

## TASK #1: HAZARD ANALYSIS

### OBJECTIVES

A hazard analysis can be accomplished either by obtaining qualified assistance from any appropriate unit of government, such as the fire department, or by contracting with a consultant. The task will require the identification of all fixed facilities where hazardous substances are manufactured, stored, distributed, transferred, or sold within a defined area. In each case the types and quantities of material involved should be determined. These factors may vary due to seasonal considerations, i.e. agricultural use of pesticides and fertilizers.

It is also necessary to examine the transportation of hazardous materials and the routes used in and through the area. The end product should be a collection of information identifying:

- Major high risk fixed facilities
- Major carriers of hazardous materials
- Main transportation routes
- Types and quantities of materials

It is essential to designate specific "key hazards" such as major manufacturing plants or particularly dangerous transportation routes. A map or or set of maps may be beneficial in illustrating the specific "key hazards" for a visual interpretation of the risks involved in the area.

## ACTIVITIES

1. Identify the specific work activities to be carried out and deliverable products to be produced. (Deliverable product means any document or illustration that will result from a particular task.)
2. Compile this information into a formal request for a proposal (RFP) if the activities are to be contracted out, or into a work plan if it is to be accomplished with existing agency assistance.

Steps involved in negotiating a contract with a consultant.

- Write a formal request for a proposal (RFP).
- Issue requests for proposal to various consultants.
- Confer with consultants as necessary to explain activities and results expected from the contractor.
- Review responding proposals.
- Interview leading candidates.
- Select consultant.
- Negotiate a finalized work plan.
- Award contract.

3. Survey and identify all of the fixed facilities where quantities of hazardous materials are found. Categorize each facility according to whether hazardous materials are manufactured, used, stored, sold, distributed, or transferred. Then characterize each facility by using the Uniform Building Code to see if the building, configuration or structure poses a threat because of the hazardous materials being used in the operation of this facility.

(NOTE: The Uniform Building Code will aid in the identification of those facilities which have safety features incorporated into the building design. These design features provide for the separation of hazardous processes, the safe removal of flammable or explosive vapor, and the containment of and diking of corrosive or toxic products. These design features will aide a responding agency in case of an incident.)

4. Identify the major modes of transportation and their routes by which hazardous materials are transported into, out of, through, and within the area. Estimate the frequencies of shipments and the types and quantities of materials involved.

(NOTE: Records of the State Public Utilities Commission, port offices, railroads, highway commissions, various fire service organizations, and other sources may need to be reviewed to obtain this information.)

5. Identify specific locations and/or routes which are "key hazards" by virtue of the type and/or quantity of material or materials; exposure to population centers or the environment; barriers to access by response agencies; danger to response personnel; and response capability of the jurisdiction.
6. Prepare a report of the findings of the hazard analysis. Include in the report a plan for periodic updating of the analysis.
7. Prepare a map or set of maps in a convenient format for visual interpretation of the report.

#### DELIVERABLES

- Report of hazard analysis findings.
- Map or maps of hazardous materials routes and locations.

#### CONSIDERATIONS OF EXAMPLES

It is important to remember that you will be dealing with private businesses and organizations and this information may be proprietary in nature. You may need to assure a business or organization that any information received will be kept confidential.

TASK TWO  
RESOURCE INVENTORY



## TASK #2: RESOURCE INVENTORY

### OBJECTIVES

A resource inventory should identify the available resources needed in dealing with a hazardous materials incident. A method of accomplishing this task is by using the Technical Advisory Committee (TAC). Types of resources to be taken into consideration are:

- Technical Assistance - Chemists, toxicologists, industrial response teams, government agencies, public or private agencies, clean up organizations, etc.
- Equipment - Self contained breathing apparatus, pumps, generators, heavy equipment, special suits, special meter equipment, etc.
- Supplies - Lime, dirt, soda ash, plugging materials, patching materials, extinguishing agents, etc.

Finally, the TAC should establish procedures for utilizing these resources.

## ACTIVITIES

1. Identify the specific work activities to be carried out, the results expected, and the deliverable products to be produced. Compile this information into a formal inter-agency memorandum.
2. Identify the local, state, and federal agencies and private companies which can respond or provide assistance to a hazardous materials incident. For each such organization:
  - A. Define the types of incidents to which the organization can respond.
  - B. Classify the organization as initial responder, advisor, clean up operation, etc.
  - C. Identify the specific information such as names, telephone numbers, etc., to be notified to elicit a response from the organization 24 hours a day.
  - D. Determine the status of any agreements with the organization. When necessary and appropriate establish, renew, or strengthen any such agreements.

- E. Assess the ability of the organization and local government to coordinate joint operations. For example, Investigate such factors as commonality of radio frequencies, interchangeability of equipment components and coordination of command and control. When necessary and appropriate, recommend changes and improvements.
3. Identify types of available equipment necessary for containment and control of an incident.
  4. Identify types of available supplies necessary for containment and control of an incident.
  5. Obtain the following information from each company or organization listed for each individual resource category.
    - Name of Business or Agency
    - Address
    - Primary Contact Person
      - . Business Phone Number
      - . After Hours Phone Number
    - Secondary Contact Person
      - . Business Phone Number
      - . After Hours Phone Number
    - Resource Category (Vehicles)
    - Characteristics of resource, i.e.
      - . Size
      - . Different Types (Chemical Truck, etc.)
      - . Power Capacity

Establish, renew, or revise any mutual aid or response agreements from commercial companies or public agencies as necessary.

#### CONSIDERATIONS AND EXAMPLES

The activities listed will help in developing an effective manual system for maintaining a resource inventory. This same information can be used when developing a computerized system. Suggestions for utilization of information in a computerized system are:

- Categorize resource by its utilization relative to a specific hazard classification.
- To prevent constant updating of information, list only the types of equipment available, not quantities.

Attached is a sample list of resources used by first responders for management of hazardous materials incidents.

Remember, even though a company may be listed as a resource their equipment may be out of service or unavailable so be sure to list as many sources as possible for each item.

## SAMPLE RESOURCE CATEGORY LIST

## TECHNICAL ASSISTANCE:

Amy Ordinance Unit  
Bomb Handlers  
Bureau of Explosives  
Chem-TREC  
Chemical Information  
Chemical Response Information  
Chemists  
Clean-up Companies  
Department of Environmental Quality  
Department of Transportation  
Environmental Protection Agency  
Fire Departments  
Gas Companies  
Hazardous Material Experts  
Hazardous Material Teams  
Highway Department  
Law Enforcement Agencies  
Motor Carrier Safety  
National Response Center (NRC)  
National Transportation Safety Board  
Port Authorities  
Public Information Media  
Public Works  
Radio Stations  
Radioactive Material Handlers  
Railroad Dispatchers  
Railroad Division Superintendent  
Railroads  
Regional Response Teams  
Sanitation Agencies  
Sheriff's Office  
State Fire Marshal  
State Police  
Stevedoring Companies  
Street Department

Structural Engineers  
Television Stations  
Toxicologists  
US Coast Guard  
US Department of Agriculture  
US Department of Transportation  
US Nuclear Regulatory Commission  
Waste Disposal Companies  
Wrecking Companies

EQUIPMENT:

A, B, and C Chlorine Kits  
Boom Floats (oil spills)  
Breathing Air (self contained breathing apparatus - positive pressure)  
Bulldozers  
Cement Mixers  
Centrifugal Pumps  
Chain Saws  
Chemical Suits  
Chlorine Patch Kits  
Circular Saws  
Construction Equipment  
Cranes  
Cutting Torches  
Dräger Kit  
Dump Trucks  
Explosion Meters  
Explosion Proof Lights  
Fire Department Equipment  
Flood Lights  
Fuel Suppliers  
Gasoline Delivery Trucks  
Generators  
Heavy Equipment  
Hurst Tools  
Infrared Probe  
Lighting Units (portable)  
Marine Tug (with fire pump)

Negative Pressure Pumps  
Oxygen Meters  
Positive Pressure Pumps  
PH Meters  
Radio Communication Center (mobile)  
Railroad Cranes  
Saws (chain, circular, gas, electric)  
Submersible Pumps  
Suction Pump Truck  
Sump Trucks  
Tow Trucks  
Tractor/Trailers  
Vacuum Tanks  
Welding Equipment

#### SUPPLIES:

Absorbents, Chemicals  
Barricades  
Barrels  
Cement  
Compressed Air  
Diking Material  
Dirt  
Drums  
Fire Department Supplies  
Foam, AFF  
Foam, Alcohol  
Foam, High Expansion  
Foam, Protein  
Gravel  
Lime  
PVC Pipes - steel, concrete, plastic, cast iron  
Plug - in - Dike  
Portable Water  
Quarries  
Rope  
Sand  
Sawdust  
Soda Ash

TASK THREE

TACTICAL INFORMATION SYSTEM



### TASK #3: TACTICAL INFORMATION SYSTEM

For the purposes of this guide a tactical information system consists of information concerning the properties and effects of hazardous materials; procedures for dealing with hazardous materials incidents; and a method of obtaining and maintaining incident information.

A practical system will include the following:

- An incident reporting system
- A reference library
- An information retrieval system

### INCIDENT REPORTING SYSTEM

#### OBJECTIVES

The incident reporting system will be a simple manual system. The system will consist of standard forms and procedural check lists for a complete, accurate, and consistent recording and reporting of hazardous materials incidents.

The Technical Advisory Committee (TAC) should interview potential providers and users of hazardous materials incident reports to determine what information is really needed and how it would be used. Next, they should design a set of data collection forms. Finally, TAC should prepare a users procedure describing how to fill out the incident report form, how to summarize statistics, and how to make practical use of the data.

## ACTIVITIES

1. Plan the work to be done in the development of a hazardous materials reporting system. Identify the specific activities to be carried out, the results expected, and the deliverable products.
2. Conduct a requirements analysis:
  - A. Identify those persons who have a need for reports, statistics, and other information concerning hazardous materials incidents.
  - B. Identify any potential external users who may require specific information, such as state or federal agencies.
  - C. Identify any external systems with which the reporting system should be compatible, such as Department of Transportation, National Fire Protection Association, Uniform Fire Incident Reporting System, or the reporting systems of the National Fire Prevention and Control Administration.
  - D. Determine the specific items of data needed to support the information needs of the person and agencies identified in "A" and "B" above.
  - E. Determine the best sources of information for each of these items.
    - dispatch records
    - police reports

- fire reports
- initial responders
- secondary responders (e.g., federal agency or clean up agency)

F. Identify agencies which require reports within a specific period of time.

G. Review any forms, reports, or procedures currently being used by public safety agencies to record and report hazardous materials incidents. Determine the degree (if any) to which they meet the requirement defined in "A" through "E" above, and outline any necessary changes.

3. Develop a set of collections forms from information gathered in the requirements analysis.
4. Prepare a procedure giving detailed instructions for gathering data, filling out the data collection forms, preparing statistics, distributing reports to the users, and maintaining reference files of completed forms and reports for further planning activities.

#### DELIVERABLES

- Data collection forms
- Utilization procedure

## CONSIDERATIONS AND EXAMPLES

Several different types of data collection forms have been developed by other hazardous material projects. A source for obtaining copies of these forms are through fire and police trade magazines and different hazardous materials newsletters and bulletins.

The information gathered for the data collection form can be used in several different manners. The obvious one is for legal documentation of the incident. Accurately document as much information as possible about an incident. This information is important because it will help establish liability, provide public information and as reference for similar incidents. When a similar incident has occurred review all past data forms. This may help in obtaining technical assistance or resources that have been used in the past. It may also help in preventing mistakes which happened in previous incidents.

Following is a sample data collection form.

HAZARDOUS MATERIALS  
INCIDENT REPORTING FORMREPORTINGDate: \_\_\_\_\_  
Time: \_\_\_\_\_

Agency Calling: \_\_\_\_\_

Person Calling: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Report Numbers: Police \_\_\_\_\_ Sheriff \_\_\_\_\_ Fire \_\_\_\_\_

PROBLEM

Address: \_\_\_\_\_

County: \_\_\_\_\_

Location Description: (Rural, Residential, etc.) \_\_\_\_\_

Date of Incident: \_\_\_\_\_ Time of Incident: \_\_\_\_\_

Name of Product: \_\_\_\_\_

EPA Number: \_\_\_\_\_

DOT Classification of Product: \_\_\_\_\_

Type of Transportation: \_\_\_\_\_

Identification Numbers: \_\_\_\_\_

Shipper, Owner, or Producer of Product: \_\_\_\_\_

Name of Carrier: (If Transportation Accident) \_\_\_\_\_

Color and Number of any Labels on the Carrier or Cargo: \_\_\_\_\_

Quantity of Product: \_\_\_\_\_

Type of Incident: Pick-up \_\_\_\_\_ Spill \_\_\_\_\_ Accident \_\_\_\_\_

Leakage \_\_\_\_\_ Purposeful Drainage \_\_\_\_\_ Fire \_\_\_\_\_

Other \_\_\_\_\_

Environmental Threats: Water \_\_\_\_\_ Ground \_\_\_\_\_

Air Problem \_\_\_\_\_ Other \_\_\_\_\_

HAZARDOUS MATERIALS  
INCIDENT REPORTING FORM  
PAGE 2

Reason for Cause of the Incident: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ACTION

Environmental Factors:

Weather Conditions: \_\_\_\_\_

Wind Direction: \_\_\_\_\_

Wind Velocity: \_\_\_\_\_

Product Factors:

Flammability: \_\_\_\_\_

Vapor Density: \_\_\_\_\_ Specific Gravity: \_\_\_\_\_

Toxicity: \_\_\_\_\_

Active Ingredient: \_\_\_\_\_

Responders:

Fire: County \_\_\_\_\_ City \_\_\_\_\_

Police (on scene control): State \_\_\_\_\_ County \_\_\_\_\_ City \_\_\_\_\_

State Agencies: DEQ/DOE \_\_\_\_\_ Agric. \_\_\_\_\_ Health Div. \_\_\_\_\_

Hwy Div. \_\_\_\_\_ Fish & Game Comm. \_\_\_\_\_ PUC \_\_\_\_\_ DOT \_\_\_\_\_

Other: EPA \_\_\_\_\_ FAA \_\_\_\_\_ NTSB \_\_\_\_\_ Forest Serv. \_\_\_\_\_

USCG \_\_\_\_\_ Other \_\_\_\_\_

Notified:

Emergency Management: State \_\_\_\_\_ County \_\_\_\_\_ City \_\_\_\_\_

Health Dept.: State \_\_\_\_\_ County \_\_\_\_\_ City \_\_\_\_\_

Hospitals: (Name of hospital) \_\_\_\_\_

Hwy Dept.: State \_\_\_\_\_ Public Works: County \_\_\_\_\_ City \_\_\_\_\_

State Agencies: Accident Response System \_\_\_\_\_ DEQ/DOE \_\_\_\_\_

Other: CHEMTREC \_\_\_\_\_ NRC \_\_\_\_\_ DOT \_\_\_\_\_

Nuclear Reg. Comm. \_\_\_\_\_ Other \_\_\_\_\_

**Action Taken:**

(Use back of page, if necessary)

**Disposal:**

HAZARDOUS MATERIALS  
INCIDENT REPORTING FORMS  
PAGE 4

Injuries: (Name and Address per Victim)

(1) \_\_\_\_\_ (2) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(3) \_\_\_\_\_ (4) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Ambulance Transporting Victims:

(1) \_\_\_\_\_ (2) \_\_\_\_\_

(3) \_\_\_\_\_ (4) \_\_\_\_\_

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Report by: \_\_\_\_\_ Date: \_\_\_\_\_



## REFERENCE LIBRARY

### OBJECTIVES

A reference library should be established because it provides essential data and safety procedures and acts as a manual backup system.

The reference library should be simply a collection of reference books, text books, manuals, papers, reports, magazines, journals, and other documents and periodicals on the subject of hazardous materials. A plan for periodic review and updating should also be included as books are needed or become available.

### ACTIVITIES

1. Conduct a literature search to develop a list of reference books, text books, manuals, papers, reports, magazines, journals, and other documents and periodicals dealing with hazardous materials. Determine the costs of each item, review the items for the selection of those which are most pertinent to the needs of the area.
2. Purchase selected documents, enter subscriptions for applicable magazines, and periodicals, and request "free" materials.
3. Plan for periodic review and updating of the reference library. For example, be placed on any mailing list for automatic modification of up-dates and revisions.

## DELIVERABLES

- List of available reference materials including costs.
- Collection of selected reference materials.

## CONSIDERATIONS AND EXAMPLES

A good source of available reference materials is through the fire and public safety trade magazines. Telephone calls to any of the hazardous materials training institutes may provide lists of good reference materials.

A list of reference materials have been included in this guide. See Appendix I.

## INFORMATION RETRIEVAL SYSTEM

### OBJECTIVES

The information retrieval system is a method for accessing information on specific hazardous materials and their locations within a specific area.

There are two different methods of presenting this information. It may be either a manual system or an electronic system. A manual system can be a set of forms cross referenced and organized into specific categories, i.e., product names, synonyms, United Nations number, and facility and kept in notebooks or card files. An electronic system can be either microfilm, microfish, or a computerized system and can also use the same information as designated above.

### ACTIVITIES

1. Plan the work to be done in the development of an information retrieval system. Identify monetary constraints.
2. Identify the fixed facilities in which hazardous materials are manufactured, used, stored, sold, distributed, or transferred.
3. Identify all the hazardous materials found in each fixed facility.

4. Research each hazardous material. Document important characteristics and factors that need to be known if the hazardous material was to be involved in an incident, i.e.,

- Flammability
- Flashpoint
- Vapor density
- Specific gravity
- Toxicity
- Reactivity
- Protective gear
- First aid information
- Extinguishing methods
- Evacuation
- Hazard class
- Synonyms, etc.

5. Develop a form for documentation of all of the research information listed in Activity 4 including the facility locations of the hazardous materials.

6. Develop a form which will cross reference locations with the vital information related to hazardous materials located at that facility. This form should be geared more towards information about the facility itself, i.e.,

- Emergency phone numbers
- 704 building placard

- Other hazardous materials found in the building
  - Protective gear
  - Extinguishing methods
  - Drainage
  - Water supplies
  - Product information experts
  - Industrial response teams
  - Facility on-site capability to handle the problem
7. If an electronic system is to be used, a review and comparison of different systems is imperative. Determine the type of system needed, cost of the system, and functional requirements for implementation.
8. Prepare a formal request for proposals. Include in the request a functional description of the desired operation of the system, a technical specification of the required hardware, a general description of the local data base contents and access requirements to remote data bases, if necessary.

NOTE: Follow same procedure as described in Task I - Hazard Analysis for awarding contracts.

9. Prepare an operational procedure for using the system. This should be done regardless of the type of system used.

## DELIVERABLES

Data collection forms

System design

Operational Procedure

## CONSIDERATIONS AND EXAMPLES

A model of a local computer data base accessing data by three different methods; common product name, synonym name, and location is shown on the following page. Each category is cross referenced to the assigned Department of Transportation number or Chemical Abstract Service (CAS) number.

Besides developing a local information retrieval system, other computerized systems are available. For example:

A system called the Chemical Information System (CIS) has 13 data bases, one of which is called OHM-TADS (Oil and Hazardous Materials Technical Assistance Data System.) This data base has 1050 products and 126 items of information per product. Factors to be taken into consideration when researching remote data bases include subscription fees, cost of actual computer usage time, and compabability with various computer systems.

If you are using a mobile radio telephone in conjunction with a field terminal to access a data system, be sure that the lines through the telephone system are compatible with the computer system.

The following is an example of a hazardous material computer print-out.

## EXAMPLES OF HAZARDOUS MATERIALS COMPUTER PRINTOUT

## HAZARDOUS MATERIALS: (Common Product Name)

Name: METHYL ETHYL KETONE  
STCC: S1193  
In Ohm-tads? (Y/N): Y  
Document: 5, 7, 10  
Pages: 234, 578, 952

Agency:  
Comments: PLCD 1-3-0 COLORLESS LIQUID WITH ACETONE ODOR. FLAM:  
FLAMMABLE LIQUID. FLAMMABLE LIMITS 1.8-10.0% FP: 21 F VD: 2.4 SPGR: .806  
REACT: REACTS VIOLENTLY WITH OXIDIZERS TOX: NARCOTIC BY INHALATION.  
TOLERANCE LEVEL 200 PPM IN AIR. AVOID IGNITION SOURCES STORE IN COOL,  
WELL VENTILATED AREA DANGEROUS FIRE RISK WEAR SCBA AND TURNOUTS  
WATER SOLUBLE SMALL FIRE-CO2 OR DRY CHEMICAL. LARGE FIRE-STANDARD  
TACTICS. CONTAINERS MAY RUPTURE. EVACUATION 2000' ALL SIDES. SYN:  
BUTANONE, MEK, ETHYL METHYL KETONE.

## SYNONYM:

Synonym Name: BUTANONE  
STCC: S1193

Synonym Name: ETHYL METHYL KETONE  
STCC: S1193

Synonym Name: MEK  
STCC: S1193

## HAZARDOUS LOCATIONS:

Street Number: 5920  
Street Address: NE 87th  
City: ENGINE 48  
STCC: S1193  
Phone 1: 252-3468  
Phone 2:  
UBC: H2  
Census: 073.00

Comments: PLCD: 4-4-3-NW MANY EXTREMELY HAZARDOUS CHEMICALS  
LOCATED ON THESE PREMISES I.E., TRICHLOROETHYLENE, TRICHLOROETHANE,  
ISOPROPYL ALCOHOL, EPICHLOROHYRIN, NITROMETHANE, AND  
PERCHLOROETHYLENE. SUSPECT CARCINOGENS ON THESE PREMISES. POSSIBLE  
RAILCAR OR TANKCAR ON THESE PREMISES. FULL TURNOUTS AND SCBA BE  
WORN AT ALL TIMES.

TASK FOUR  
RESPONSE UNIT



TASK #4: RESPONSE UNIT

## OBJECTIVES

Although there are different types of response units throughout the nation, for the purposes of this guide, a description of a converted "motor home" response van will be provided.

Hazardous materials incident first responder units should be established within the appropriate agency. The objective of these units is to provide fast initial response, identification of the material, assessment of the incident, and initial containment and control of the incident until a private company or government team arrives for containment and clean up of the incident. The response unit should also be able to handle the total management of small scale incidents, if necessary. The unit must be staffed with trained professionals available on call 24 hours every day. The unit should be fully loaded, equipped and self contained.

## ACTIVITIES

1. Plan the work to be done in establishing a response unit.
2. Study the hazardous materials response units throughout the nation. Determine the type of unit needed and identify the type of equipment to purchase for the needs of the area.
3. Establish a response unit.
  - Prepare procurement specifications for the response unit and equipment.
  - Design the internal arrangement of the unit.
  - Order and procure the unit and equipment.
  - Construct the interior of the unit and install the equipment.
4. Set up the organizational personnel framework of the unit.
5. Establish written operating policies and procedures for activation and response.
6. Prepare written job descriptions for each member of the response team and assign roles.
7. Provide and prepare procedures for training of personnel and testing of equipment.

## DELIVERABLES

- Response van and equipment.
- Operating policies and procedures for unit.
- Job descriptions for response team personnel.
- Procedures for testing equipment.
- Response Team training program and schedule.

## CONSIDERATIONS AND EXAMPLES

When deciding what type of response unit is needed, keep in mind what other type of response equipment may need to accompany the hazardous materials response unit or if the unit will be used for primary response. Provide for optimal utilization of the unit by its dual-use as an on-site command post for other emergency situations.

Carefully study all brands of equipment. Don't let costs be the primary factor. Determine your choice by the safety protection factors the equipment may offer as related to the danger of the hazardous material products.

When writing the operational procedures for the response unit, be sure to research various response agencies and determine the functions which your agency will be responsible for. You may not want to duplicate operations, so be sure your guidelines are clear.

A model design of a "motor home" response unit is shown on the following page.

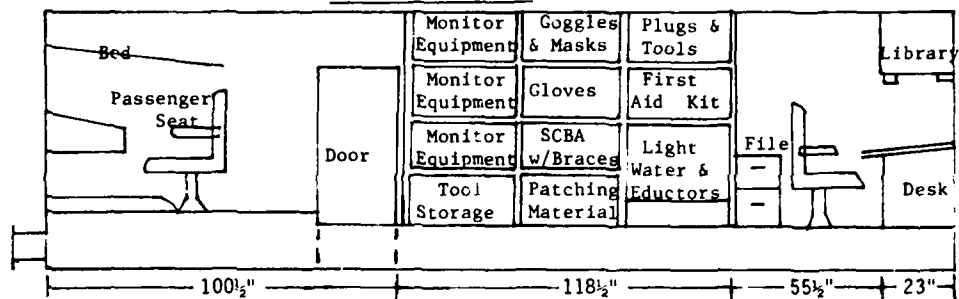
A sample inventory of the unit may be found in Appendix 2.

When selecting your response team, it is advisable to organize it based on a multi-disciplinary response. For example: two firemen, one policeman, and one emergency management person. By having a multi-disciplinary response, the differentiation of roles between police, fire, and emergency management personnel will be maintained and communications will remain open because each team member can talk to their respective agency and keep them apprised of the situation. It is often very difficult for one agency to direct the actions of another agency and expect them to respond, even if it is in the best interest of safety. Although the problem will not be resolved, it should be alleviated.

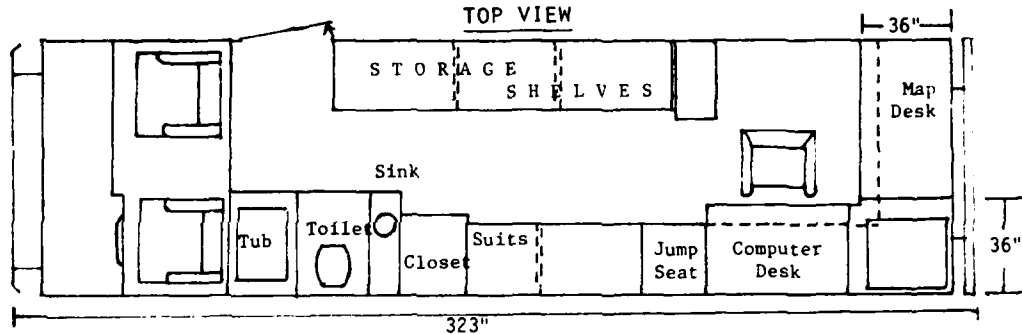
A response team for a unit as described in this guide should consist of at least three people. A minimum of four members is advised. This will provide for one 2-man team, a back-up/monitor for the team, and one communications/resource person.

## HAZARDOUS MATERIALS RESPONSE UNIT

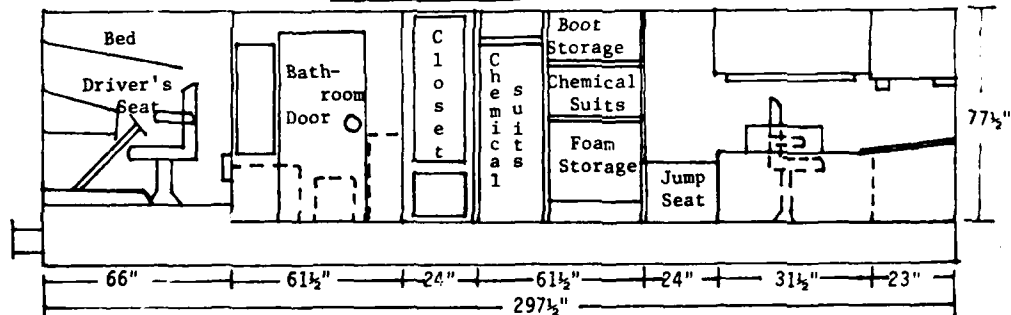
RIGHT SIDE VIEW



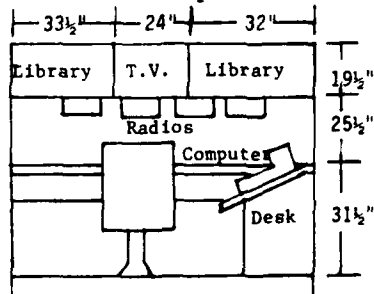
TOP VIEW



LEFT SIDE VIEW



END VIEW



TASK FIVE  
TRAINING

## TASK #5: TRAINING

### OBJECTIVES

The hazardous materials training program should emphasize the identification and coordination of existing courses, rather than the creation of redundant new courses. A well coordinated training program may consist of courses supplied by government agencies as well as private or commercial organizations. These courses should be cataloged and arranged in logical sequence and functional groups that meet the needs of the locale in which they are to take place.

### ACTIVITIES

1. Plan the work to be done for a coordination of training programs. Identify the specific activities to be carried out, the results expected, and the deliverable products to be produced.
2. Determine the training needs of the agencies with responsibilities related to hazardous materials. Specifically determine who must be trained, the subject areas that must be covered, and any costs and schedule considerations that will apply.

3. Identify any professional or educational organizations or agencies which provide official recognition and certification of hazardous materials training programs. Such organizations might include local colleges and universities, the State Board on Police Standards and Training, the National Fire Prevention and Control Administration, fire training and standards boards, etc. Identify the specific standards and requirements for such certification.
4. Identify the hazardous materials training programs available to local personnel. These would include in-service programs provided by local agencies of the various disciplines, as well as classes and programs offered by state and federal agencies, private companies, professional groups, and other organizations.
5. Collect and compile complete information on all of the courses in Activity 4. The information on each course should include:
  - Eligibility requirements
  - Course content
  - Duration
  - Travel information
  - Location
  - Fees
  - Materials and supplies



6. Analyze information in Activity 5. Identify those courses which can best meet local objectives. Organize them into a curriculum in such a way that the content is not redundant, it follows a logical progression, and it builds upon each preceeding section or class. In this way the prerequisites for each succeeding course are met by earlier courses. Identify those courses or sequences appropriate to different disciplines or functional areas of responsibilities and/or various phases of response, e.g., containment and control, disposal and recovery. Identify any gaps in the resulting program which must be covered by supplementary inservice training. Verify that the overall program meets any certification requirements as previously defined.
7. Establish a program for maintaining a cadre of adequately and appropriately trained personnel by:
  - Providing for training of multi-disciplinary instructors to present inservice classes and assist in the conduct of intermediate and advanced training courses.
  - Coordinating training courses developed and conducted by government agencies and private organizations.
  - Obtaining current information on the development of new hazardous materials training programs.
  - Send key personnel to appropriate hazardous materials courses.

## DELIVERABLES

- Work plan
- List of available training courses
- Report identifying multi disciplinary training needs.
- Curriculum implementation plan
- Certification criteria

## CONSIDERATIONS AND EXAMPLES

The course published by the National Fire Protection Association is a good basic orientation program. It should be followed up with a course such as the one outlined on the next page.

Training and education should be a continuous element of the management program. It should consist of the most up-to-date information available.

Various companies will either conduct training classes or provide information to be incorporated in local programs. A sample list of these agencies and organizations is found in Appendix III.

## INTERMEDIATE HAZARDOUS MATERIALS COURSE CURRICULUM

## WEEK I

DAY IINTRODUCTIONHAZARDOUS MATERIALS

- A. Classes of Fires
  - 1. Class A
  - 2. Class B
  - 3. Class C
  - 4. Class D
- B. Identifications of Hazardous Materials
  - 1. DOT classification
    - a. Explosive materials
    - b. Compressed gases
    - c. Flammable liquids and solids
    - d. Chemically reactive materials
    - e. Biologically active materials
    - f. Radioactive materials
  - 2. 704M system
- C. Tactical Information Systems
  - 1. CHEMTREC
  - 2. Chemical Information Systems
  - 3. Reference materials

## MATTER AND ENERGY

- A. Matter Defined
- B. Units of Measurement
  - 1. Length
  - 2. Volume
  - 3. Mass
- C. Density of Matter
  - 1. Vapor density
  - 2. Specific gravity
- D. Energy Defined
- E. Temperature
- F. Pressure
- G. Effects of Heat on Matter
  - 1. Heat - calorie, BTU
  - 2. Conduction
  - 3. Convection
  - 4. Radiation
  - 5. Heat capacity
  - 6. Changes in phase
  - 7. Coefficient of expansion
- H. Flammability
  - 1. Flashpoints
  - 2. Kindling points

DAY 2

- I. The Gaseous State
  - 1. Boyle's Law
  - 2. Charles Law
  - 3. BLEVE
- J. Hazards of Cryogenics
  - 1. Critical Temperature
  - 2. Critical Pressure
  - 3. Critical Volume

SUBDIVISIONS OF MATTER

- A. Elements and Compounds
  - 1. Physical properties
  - 2. Chemical properties
- B. Atoms, Molecules and Ions
- C. Chemical Formulas
  - The periodic chart
  - a. Metals
  - b. Non-metals

PRINCIPLES OF CHEMICAL REACTIONS

- A. Types of Chemical Reactions
  - 1. Synthesis reactions
  - 2. Decomposition reactions
  - 3. Single - replacement reactions
  - 4. Double - replacement reactions
  - 5. Oxidation - reduction reactions

- B. Rate of Chemical Reactions
  - 1. Nature of material
  - 2. Subdivision of the reactants
  - 3. State of aggregation
  - 4. Concentration of reactants
  - 5. Activation energy
  - 6. Temperature
  - 7. Catalysis
- C. Chemistry of Combustion
- D. Chemistry of Fire Extinguishment
  - 1. Water
  - 2. Fire extinguishment agents
  - 3. Foams

### DAY 3

#### CHEMISTRY OF SOME ELEMENTS

- A. Oxygen
  - 1. LOX
  - 2. Principles of oxidation
- B. Hydrogen
  - 1. Liquid hydrogen
  - 2. Hydrogen - oxygen explosions
  - 3. Activity series
- C. Fluorine, Chlorine, and Bromine

1. Fluorine (oxidizing ability)
2. Chlorine
3. Bromine
- D. Carbon
- E. Phosphorus
  1. Allotropes
  2. Compounds
- F. Sulfur
  1. Compounds
  2. Mercaptans

#### TRIP TO CHLORINE FACILITY

- A. "A" Kit demonstration
- B. "B" Kit demonstration
- C. "C" Kit demonstration

#### DAY 4

#### CHEMISTRY OF CORROSIVE MATERIALS

- A. Acids
  1. Strength of acids
  2. Reactions of acids
  3. Other acids
- B. Alkalis (bases)
  1. Strength of bases
  2. Reactions of alkalis
  3. Other alkalis

## CHEMISTRY OF WATER REACTANT MATERIALS

- A. Alkali Metals
  - 1. Amalgams
  - 2. NAK
- B. Magnesium, Zirconium, Titanium, Aluminum and Zinc
- C. Organometallic Compounds
- D. Hydrides
- E. Peroxides
- F. Nitrides, Carbides and Phosphides
- G. Water reactive Inorganic Chlorides
- H. Water-reactive Organic Compounds

## PLASTIC, RESINS AND FIBERS

- A. Polymers
  - 1. Fire hazards
  - 2. Toxic hazards
- B. Monomers
  - 1. Fire hazards
  - 2. Toxic hazards

## DAY 5

### TOXIC MATERIALS

- A. Basics of Toxicity
- B. Measurement of Toxicity
  - 1. LD 50



- 2. LC 50
- 3. TLV
- C. Carbon Monoxide and Carbon Dioxide
- D. Hydrogren Cyanide
- E. Hydrogen Sulfide and Sulfur Dioxide
- F. Oxides of Nitrogen
- G. Ammonia
  - 1. Spill control
  - 2. Properties and specifications
- H. Toxic Heavy Metals
- I. Protection from Toxic Materials

#### PESTICIDES

- A. Labeling
- B. Hazards
- C. Shipping
- D. Containers
- E. Poisoning
  - 1. Symptoms
  - 2. Treatment
- F. Preplanning
  - 1. Facilities
  - 2. Resources
  - 3. Demonstrations

#### EXERCISE IN USE OF PROTECTIVE GEAR

WEEK 2DAY 1OXIDATION - REDUCTION REACTIONS

- A. Principles of Oxidizer and Fuel
- B. Strength of Oxidizers
- C. Oxidizer Hazards
- D. Peroxides
- E. Ammonium Compounds
- F. Permangantes
- G. Ammonium Nitrate
- H. Nitrates
- I. Hydranzine (a reducing agent - fuel)

DEMONSTRATION IN PATCHING OF SMALL CONTAINERSRADIOACTIVE MATERIAL

- A. Nuclei, Isotopes and Radioactivity
- B. Types of Radiation
- C. Units of Measurement
- D. Effects of Radiation
- E. Equipment Demonstrations
- F. Exercise in Monitoring Radioactive Materials

DAY 2ORGANIC COMPOUNDS

- A. Classification of Organic Compounds
- B. Hazards of Organic Compounds
  - 1. Fire
  - 2. Toxicity
- C. Gaseous Hydrocarbons
  - 1. LPG gas
  - 2. Acetylene
- D. Aromatic Hydrocarbons
- E. Alcohols
- F. Organic Peroxo Compounds
- G. Miscellaneous Organic Compounds
- H. Containment of Flammable Liquid Spills

TRIP TO LPG FACILITYDAY 3CHEMICAL EXPLOSIVES

- A. Classes of Explosives
  - 1. Terms
  - 2. DOT classes
  - 3. Nitroglycerine
  - 4. Dynamite
  - 5. TNT

- B. Primary Explosives
- C. Homemade Bombs
- D. Gaseous Explosions

LOCAL BOMB SQUAD TECHNICIAN SPEAKER

DEMONSTRATION OF BOMB DISPOSAL UNIT

DAY 4

TRUCKS

- A. Truck Specifications
- B. Truck Identification
  - 1. MC 301
  - 2. MC 306
  - 3. MC 311/312

TRIP TO TRUCK FACILITY

RAILROADS

- A. Types of Cars
- B. Car Specifications
- C. Waybill
- D. Attack Methods

TRIP TO RAILYARD

69  
DAY 5

CHEMICAL DEMONSTRATIONS

NEUTRALIZATION EXERCISE

TASK SIX  
PREVENTION PROGRAM

## TASK #6: PREVENTION PROGRAM

### OBJECTIVES:

Prevention often times is a matter of awareness. To promote this the emergency manager should establish a program to reduce the number of hazardous materials incidents within the jurisdiction by: clarifying legal rights and responsibilities; strengthening the existing enforcement program;

- Supporting industrial hazardous materials programs
- Orientating judges and other officials to the nature and impact of hazardous materials incidents
- Increasing public awareness.

A hazardous materials incident prevention program can be modeled upon standard fire prevention or public safety programs and practices. First, the Technical Advisory Committee (TAC), with the assistance of legal counsel should review and summarize existing laws , i.e., Code of Federal Regulations #49, under which enforcement and prevention activities must function (drafting of new legislation may not always be the best way to deal with the problems). In the light of the review, enforcement programs should be examined and strengthened where necessary. Next, an industrial relations program should be organized. The purpose of this program would be to establish a liaison with the "key hazard" companies, making sure they are at least in compliance with the law. Inform them of program activities, work out incident response plans with them and assist them in conducting their own training and safety programs. Finally, a small scale public awareness campaign should be initiated. The objective of which is to inform the public of program activities and increase public awareness of the dangers inherent in dealing with hazardous materials.

## ACTIVITIES

1. Plan the work to be done to establish a prevention program. Identify the specific activities to be carried out, the results expected, and the deliverable products to be produced.
2. Review and summarize the local, state, and federal laws which define authority and responsibility with respect to hazardous materials.
3. Review the enforcement program and strengthen it as required:
  - A. Identify agencies which have authority and responsibility for enforcing hazardous materials laws. Determine their formal and informal policies concerning enforcement of these laws, and estimate their level of enforcement activity.
  - B. Identify the state and federal agencies which have enforcement authority in a specific geographic location. Clarify the procedures and policies for activating these agencies.
  - C. Establish specific goals and objectives for enforcement of hazardous materials laws in the jurisdiction. Adopt any hazardous materials laws which may be appropriate for enforcement within a jurisdiction.
  - D. As required, establish, strengthen, or redirect local authority in the use of local, state, and federal enforcement agencies.



- E. Work with the enforcement agencies and prosecuting officials, as required, to obtain their concurrence and support in implementation of the programs.
4. Identify the major industries and organizations, constituting potential "key hazards", which may be appropriate subjects for a hazardous materials industrial relations program. For each such organization:
- A. Establish formal liaison with key persons in the organization.
  - B. With approval of the agency, review their hazardous materials safety, prevention, response, and containment policies and programs, and discuss perceived limitations.
  - C. Explain to liaison personnel the local hazardous materials programs in terms of:
    - Resources available to the area and to the organization from or through the jurisdiction.
    - Response capabilities of the jurisdiction and other agencies and companies.

- Specific response plans pertinent to the organization.

D. Help the liaison personnel to organize internal informational and training programs.

5. Establish a program to inform the public of the hazardous materials management project and to generally make them aware of the problems and dangers in dealing with hazardous materials. Utilize press releases, newspaper articles, media announcements, and other methods as necessary and appropriate.
6. Prepare a report summarizing the findings of the legal review, the industrial relations program, and the public relations program.

#### DELIVERABLES

- Work plan
- Summary report of findings and programs

#### CONSIDERATIONS AND EXAMPLES

It is essential that communications between public and private agencies be open and direct at all times. Misunderstandings frequently occur between these sectors and could result in a strained working environment that may exacerbate rather than alleviate a hazardous materials incident.

## CONCLUSION

## CONCLUSION

The transportation of hazardous materials is increasing daily in communities all over the country. As accidents do occur during the transportation of these commodities, it is imperative that adequate prevention enforcement and response programs are available to protect our citizens and mitigate long term damage to our environment.

The development of a comprehensive Hazardous Materials Management System requires a serious commitment by the local government entity instituting the program, and the cooperation of emergency management, police, and fire agencies to succeed.

This guide was produced to provide emergency managers with information delineating one method of developing a Hazardous Materials Management System that has proven successful in one jurisdiction.

## APPENDIX I

## REFERENCE LIBRARY LIST

APPENDIX I  
REFERENCE LIBRARY LIST

	<u>Cost (1981)</u>
ACCIDENT REPORTS National Transportation Safety Board Washington, D. C. 20591	Free
AMERICAN NATIONAL STANDARD FOR THE STORAGE & HANDLING OF ANHYDROUS AMMONIA (Standard K61.1) American National Standards Institute, Inc. 1430 Broadway New York, New York 10018	
ANALYSIS OF PROCEEDINGS OF THE NATIONAL TRANSPORTATION SAFETY BOARD Into Derailments of Hazardous Materials, April 4 through 6, 1978 National Transportation Safety Board Washington, D. C. 20591	Free
BASIC PRINCIPALS OF RADIATION PROTECTION-TP 30 Training Resource Center (HFX-70) DTMA, BRH, FDA 5600 Fishers Lane Rockville, Maryland 20857	Free
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CHRIS MANUAL - HAZARDOUS CHEMICAL DATA Superintendent of Documents U.S. Government Printing Office Washington, D.C. 20402 (Stock #050-012-00147-2)	
CHEMICAL ENGINEERS HANDBOOK, 5th Edition By Robert H. Perry & Cecil H. Chilton McGraw - Hill Book Company 1221 Avenue of The Americas New York, New York 10020	56.50
CHEMICAL SAFETY SLIDE RULE National Safety Council 444 N. Michigan Avenue Chicago, Illinois 60611 Stock #129.91-9	6.00

CHEMISTRY OF HAZARDOUS MATERIALS By Meyer Prentice - Hall, Inc. 200 Old Tappan Road Old Tappan, New Jersey 07675	20.00
CHLORINE MANUAL The Chlorine Institute, Inc. 342 Madison Avenue New York, New York 10017	3.00
COMPRESSED GASES & CRYOGENICS REPORT Van Nostrand Reinhold Company 7625 Empire Drive Florence, Kentucky 41042	144.00/YR
CONTROL OF INTERNAL RADIATION HAZARDS - TP 51 Training Resource Center (HFX-70) DTMA, BRH, FDA 5600 Fishers Lane Rockville, Maryland 20857	Free
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CORRELATION OF UNITS OF ACTIVITY & EXPOSURE - TP 53 Training Resource Center (HFX-70) DTMA, BRH, FDA 5600 Fishers Lane Rockville, Maryland 20857	Free
CRITICAL REVIEWS IN TOXICOLOGY, Vol. 9 CRC Press, Inc. 2255 Palmbeach Lakes West Palmbeach, Florida 33409	80.00
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DIRECTORY OF CHEMICAL PRODUCERS Stanford Research Institute International Attention: Elaine Klapproth 333 Ravenswood Avenue Menlo Park, California 94025	595.00
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Willoughby, Ohio 44094
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Office of Pesticides & Toxic Substances  
Washington, D.C. 20460
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Number FSP-36A
- FIRE PROTECTION GUIDE ON HAZARDOUS MATERIALS 14.00  
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New York, New York 10001
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Marcel Dekker, Inc.  
270 Madison Avenue  
New York, New York 10015

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By Howard J. Strauss, PhD  
McGraw - Hill Book Company  
PO Box 400  
Hightstown, New Jersey 08520
- HANDBOOK OF ANALYTICAL TOXICOLOGY GENERAL DATA 59.95  
CRC Press, Volume 1 - Section A  
Volume 2 - Section B  
2000 NW 24th Street  
Boca Raton, Florida 33431
- HANDBOOK OF LABORATORY SAFETY, 2nd Edition  
By Steere  
CRC Press, Inc.  
The Chemical Weber Company  
18901 Cranwood Parkway  
Cleveland, Ohio 44128
- HANDBOOK OF POISONING: DIAGNOSIS & TREATMENT 19.00  
Robert H. Dreisbach  
Lange Medical Publications, Inc.  
Drawer L  
Los Altos, California 94022
- HANDLING RADIATION EMERGENCIES  
National Fire Protection Association  
470 Atlantic Avenue  
Boston, Massachusetts 02110
- HAZARD ASSESSMENT HANDBOOK 14.00  
Superintendent of Documents  
U. S. Government Printing Office  
Washington, D. C. 20402  
(Stock No. 050-012-00160-0)  
(Document CG 446)
- HAZARDOUS CHEMICAL SPILL CLEANUP  
Noyes Data Corporation  
Noyes Building  
Park Ridge, N. J. 07656
- HAZARDOUS COMMODITY HANDBOOK, 4th Edition  
National Tank Truck Carriers, Inc.  
1616 P Street NW  
Washington D. C. 20036
- HAZARDOUS MATERIALS EMERGENCY RESPONSE GUIDEBOOK Free  
Dept. of Transportation  
Materials Transportation Bureau  
Research and Special Programs Administration  
Washington, D. C. 20590

HAZARDOUS MATERIALS GUIDEBOOK  
 American Trucking Association, Inc.  
 Attn: Traffic Department  
 1616 P Street, NW  
 Washington, D.C. 20036

HAZARDOUS MATERIALS GUIDE - NFPA, 7th Edition  
 National Fire Protection Association  
 470 Atlantic Avenue  
 Boston, Massachusetts 02210

Free

HAZARDOUS MATERIALS GUIDE, 5th Edition  
 United Parcel Service  
 51 Weaver Street  
 Greenwich Office Park 5  
 Greenwich, Connecticut 06830

HAZARDOUS MATERIALS HANDBOOK  
 By James H. Meidl  
 Glencoe Publishing Company, Inc.  
 17337 Ventura Blvd.  
 Encino, California 91316

9.95

HAZARDOUS MATERIALS HANDBOOK  
 The Operations Council  
 American Trucking Association, Inc.  
 1616 P Street, NW  
 Washington, D.C. 20036

HAZARDOUS MATERIALS NEWSLETTER  
 Materials Transportation Bureau  
 Research and Special Programs Administration  
 Washington, D.C. 20590

Free

HAZARDOUS MATERIALS REFERENCE MANUAL, 2nd Edition  
 Labelmaster  
 Complete Pocket Digest  
 6001 N. Clark Street  
 Chicago, Illinois 60660

HAZARDOUS MATERIALS TRANSPORTATION ACCIDENT  
 National Fire Protection Association  
 470 Atlantic Avenue  
 Boston, Massachusetts 02110

6.00

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 by Isman  
 Order Code: 47502  
 Glencoe Publishing Company  
 100 West Brown Street  
 Riverside, New Jersey 08370

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INTERNATIONAL MARITIME DANGEROUS GOODS CODE Amendments 14, 76 and 15, 77 Annex 1 Brochure-IMCO Unipub 345 Park Avenue South New York, New York 10010	55.00
LANGE'S HANDBOOK OF CHEMISTRY, 11th Edition By John A. Dean McGraw - Hill Book Company 1221 Avenue of the Americas New York, New York 10020	34.50
MATHESON GAS DATA BOOK Matheson Gas Products East Rutherford, New Jersey	
MEDICAL FIRST AID GUIDE FOR USE IN ACCIDENTS INVOLVING DANGEROUS GOODS Unipub 345 Park Avenue South New York, New York 10010	16.50
MEDICAL XRAY PROTECTION-TP 105 Training Resource Center (HFX-70) DTMA, BRH, FDA 5600 Fishers Lane Rockville, Maryland 20857	Free
MERCK INDEX Merck & Company, Inc. PO Box 2000 Rahway, New Jersey 07065	

NIOSH REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES GPO Stock #017-033-00346-7 Superintendent of Documents U. S. Government Printing Office Washington, D. C. 20402	22.00
NIOSH/OSHA POCKET GUIDE TO CHEMICAL HAZARDS GHEW Publication #78-210, GPO Stock #017-033-00342-4 Superintendent of Documents U. S. Government Printing Office Washington, D. C. 20402	5.50
OCCUPATION EXPOSURE LIMITS FOR AIRBORNE TOXIC SUBSTANCES Unipub 345 Park Avenue South New York, New York 10010	
OIL SPILLS AND SPILLED HAZARDOUS SUBSTANCES U. S. Environmental Protection Agency Oil and Special Materials Control Division 401 M Street, SW Washington, D.C. 20460	Free
OIL & HAZARDOUS MATERIALS TECHNICAL ASSISTANCE DATA SYSTEM U.S. Environmental Protection Agency Oil & Special Materials Control Division Office of Water Program Operations Washington, D. C. 20460	Free
OIL & HAZARDOUS SUBSTANCES RESPONSE MANUAL Region 10 Contingency Plan DPA 1200 Sixth Avenue Seattle, Washington 98101	Free
PERSONAL INSTRUMENTS-TP 129 Training Resource Center (HFX-70) DTMA, BRH, FDA 5600 Fishers Lane Rockville, Maryland 20857	Free
PESTICIDE PRODUCTS SAFETY MANUAL Shell Chemical Company 2401 Crow Canyon Road San Ramon, California 94583	
PLANNING FOR HANDLING OF RADIATION ACCIDENTS (Safety Series #32-STI/PUB/227) Unipub 345 Park Avenue South New York, New York 10010	9.75

PROPERTIES & PRODUCTION OF XRAYs-TP483 Training Resource Center (HFX-70) DTMA, BRH, FDA 5600 Fishers Lane Rockville, Maryland 20857	Free
PROTECTIVE CLOTHING FOR CHLORINE-65 The Chlorine Institute 342 Madison Avenue New York, New York 10017	Free
QUANTITY & UNITS OF RADIATION-TP481 Training Resource Center DTMA, BRH, FDA 5600 Fishers Lane Rockville, Maryland 20857	Free
RADIATION PROTECTION GUIDES-TP 145 Training Resource Center (HFX-70) DTMA, BRH, FDA 5600 Fishers Lane Rockville, Maryland 20857	Free
RADIOACTIVITY - TP 152 Training Resource Center (HFX-70) DTMA, BRH, FDA 5600 Fishers Lane Rockville, Maryland 20857	Free
RECOGNITION AND MANAGEMENT OF PESTICIDE POISONING, 2nd Edition U. S. Environmental Protection Agency Office of Pesticide Programs Washington, D. C. 20460	
REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES Department of Health Education and Welfare National Institute of Occupational Safety and Health 1600 Clifton Road, NE Atlanta, Georgia 30333	Free
RESPONSE METHOD HANDBOOK Document CG446 - 4 Superintendent of Documents U. S. Government Printing Office Washington, D. C. 20402	6.50
RISK EVALUATION FOR PROTECTION OF THE PUBLIC IN RADIATION ACCIDENTS (Safety Series #21-STI/PUB/124) English Version Exclusive Distribution Agency In The U. S. Unipub 345 Park Avenue, South New York, New York 10010	7.00

SAFETY IN TRANSPORTATION, STORAGE, HANDLING AND  
USE OF EXPLOSIVES

Free

Publication #17  
Institute of Makers of Explosives  
420 Lexington Avenue  
New York, New York 10017

SEALED SOURCES IN INDUSTRY-TP 188

Free

Training Resource Center  
DTMA, BRH, FDA  
5600 Fishers Lane  
Rockville, Maryland 20857

SHELL CHEMICAL SAFETY GUIDE

Shell Chemical Company  
2410 Crow Canyon Road  
San Ramon, California 94583

SHIELDING PROPERTIES OF COMMON MATERIALS (LAB)-TP 295

Free

Training Resource Center  
DTMA, BRH, FDA  
5600 Fishers Lane  
Rockville, Maryland 20857

SHIELDING PROPERTIES OF COMMON BUILDING MATERIALS FOR XRAY  
& GAMMA RAYS

Free

Training Resource Center  
DTMA, BRH, FDA  
5600 Fishers Lane  
Rockville, Maryland 20857

SOURCES OF RADIATION EXPOSURE-TP465

Free

Training Resource Center  
DTMA, BRH, FDA  
5600 Fishers Lane  
Rockville, Maryland 20857

THE BASIC REQUIREMENTS FOR PERSONNEL MONITORING

8.75

(Safety Series #14-STI/PUB/95)  
Unipub  
345 Park Avenue South  
New York, New York 10010

THE CLINICAL HANDBOOK ON ECONOMIC POISONINGS - EMERGENCY  
INFORMATION FOR TREATING OF POISONING

By The Public Health Service Publication  
U. S. Government Printing Office  
Washington, D. C. 20402

THE CONDENSED CHEMICAL DICTIONARY

By Gessner G. Hawley  
Van Nostrand Reinhold Company  
450 West 33rd Street  
New York, New York 10001

- THE FIRE FIGHTERS HANDBOOK OF HAZARDOUS MATERIALS 8.58  
By Charles J. Baker  
Maltese Enterprises, Inc.  
PO Box 34048  
Indianapolis, Indiana 46234
- THERAPEUTIC XRAY EQUIPMENT-TP 214 Free  
Training Resource Center  
DTMA, BRH, FDA  
5600 Fishers Lane  
Rockville, Maryland 20857
- TITLE 49 CODE OF FEDERAL REGULATIONS Free  
Superintendent of Documents  
United States Printing Office  
Washington, D. C. 20402
- TOXIC CHEMICALS - A PUBLIC PROTECTION Free  
Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402
- TOXIC SUBSTANCES Free  
Control of Chemical Substances  
Inventory: Initial Inventory  
Industry Assistance Office  
U. S. Environmental Protection Agency  
401 M Street, SW  
Washington, D.C. 20460
- TOXICOLOGY OF DRUGS & CHEMICALS 36.00  
William Deichmann & Horace W. Gerarde  
4th Edition, Academic Press, Inc.  
Harcourt Brace Jovanovich Building  
1001 Polk Street  
San Francisco, California 94109  
ISBN 0-12-208858-1



## APPENDIX II

## RESPONSE UNIT INVENTORY

AD-A104 437

MULTNOMAH COUNTY OFFICE OF EMERGENCY MANAGEMENT POR--ETC F/G 13/12  
HAZARDOUS MATERIALS MANAGEMENT SYSTEM. A GUIDE FOR LOCAL EMERGE--ETC(U)  
JUL 81 M T LEE; P 6 ROE DCPA01-79-C-0323

UNCLASSIFIED

MCOEM-0779

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ANALYST

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## APPENDIX II

## HAZARDOUS MATERIALS RESPONSE UNIT INVENTORY

ITEM

Air Tanks  
Air Tanks, Positive Pressure with Braces and Regulator  
Ax, Firefighting  
Bag, Resusci Folding Ambu  
Binoculars, 8 x 24 Power  
Blankets  
Bombs, Smoke  
    1/2 minute  
    1 minute  
    5 minute  
Boots, Rubber  
Boots, Turnout  
Broom, Kitchen  
Cabinet, File  
Cables, Booster  
Camera, 35 mm with flash and lens attachment  
Charger, Radio  
    Desk, 110 Volt  
    Vehicular, 12 Volt  
Cleaner, Hand  
Coveralls, Blue  
Coveralls, Flame Retardant  
Detectors, Infrared Probeye  
Detectors, Radiation  
Dräger Kit, with Tubes  
Duck Seal  
Educator, foam  
Extinguisher, ABC Dry Chemical  
Extinguisher, Halon 1211  
Extinguisher, Metal-X  
Foam, Alcohol 6%  
Kit, First Aid  
    Airways  
    Applicators, Cotton Tipped  
        3"  
        6"  
    Bandage, Compress  
        2"  
        3"  
        4"  
    Bandages, Gauze  
        1"  
        2"  
    Bandages, Stretch  
        1"  
        2"

Bandages, Zip Strip  
 Cotton, Sterile  
 Cream, First Aid  
 Cuff, Blood Pressure  
 Depressors, Tongue  
 Inhalants, Ammonia  
 Instant Glucose  
 Isoprophyl Alcohol Rubbing Compound  
 Lotion, Calamine  
 Masks, Oxygen  
 Ointment, Antiseptic and Burn  
 Pads

Eye

Gauze

2 X 2

3 X 3

4 X 2

Sanitary

Pins, Safety

Rolls, Gauze

1"

2"

Scissors, Assorted

Splints

Splints, Wire

Stethoscope

Tape, Adhesive

1/2"

1"

2"

3"

Thermometers

Tourinquet and Forceps

Wipes, Wound

Flares

Gloves

Leather

Neoprene

Plastic - PVC

Rubber - Natural

Goggles

Heater

Helmets, Acid with Face Shields

Helmets, Fire

Meter, Hydrocarbon and Oxygen with 5' Brass Probes

Jackets, Turnout

Light, Extension

Masks, Oxygen Face

Monitors, Organic Vapor

Pants, Turnout

Pick Handle

Pick Head

Pillows

Plug-n-dike - 48 Pounds

Plugs, Oak  
3/4" - 4"  
Radio, CB 40 Channel  
Radio, UHF 2 Channel Portable  
Radio, UHF 8 Channel Portable  
Radio, UHF Mobile Base  
Radio, VHF 8 Channel Portable  
Radio, VHF Mobile Base  
Rope  
Rope, Nylon  
Scanner  
Sheets  
Sheet Rolls, Plastic  
Shovels  
    Square  
    Round End  
Soda Ash  
Suits, Acid  
Suits, Fire Entry  
Suits, Incapsulated  
Suits, Incapsulated with Case  
TV, Color  
Tank, Resuscitator  
Tape, Flagging  
Telephone, Mobile  
Tools, Non-Sparking  
    Bars, Pry  
    Chisel, Coal  
        Small  
        Medium  
    Crowbar  
        Medium  
        Small  
    Hammer  
        Ballpeen  
            Medium  
            Large  
        Chipping  
        Sledge  
    Pliers, Battery  
    Scoop, Shovels  
    Scrapers  
        Short Handled  
        Long Handled  
    Screwdriver  
        Phillips  
        8"  
    Wrench  
        Crescent  
            10"  
            12"  
            15"

- Pipe
  - 10"
  - 14"
  - 18"
- Tools, Regular
  - Die Set
  - Chisel, Coal
  - Level
    - Small
  - Pliers
    - Battery
    - Dike
    - Electric Wire
    - Side Cutters
    - Vise Grip
      - 7"
  - Point Gauge Tool
  - Punches, Center
  - Saw, Hack with Extra Blades
  - Screwdriver
    - Phillips
      - 5"
      - 6"
      - 7"
      - 12"
    - Regular
      - Small
      - Medium
    - Square End
      - 7"
      - 9"
      - 15"
  - Shovel
    - Square Nose
      - 15"
      - 20"
  - Socket Set
    - 1/8"
    - 1/4"
    - 1/2"
  - Tow Clamps
  - Wrench
    - Allen
      - Box
        - 7/16-3/8
        - 9/16-1/2
    - Crescent
      - 6"
      - 12"
      - 15"

Open End

19/32-11/16

5/16-1/4

7/16-3/8

7/16-1/2

9/16-1/2

3/4-5/8

Open End Box

1/4

5/8

7/8

3/4

9mm

Pipe

10"

Towels

Water, light 6%

APPENDIX III

LIST OF AGENCIES AND ORGANIZATIONS  
PROVIDING TRAINING PROGRAMS



## HAZARDOUS MATERIALS TRANSPORTATION COURSES AND SEMINARS

## College and University Courses and Seminars

Alabama

University of Alabama  
 Department of Commerce and Business  
 Dr. Stanley J. Hille  
 Box J  
 University, Alabama 35486  
 (205) 348-6100

University of South Alabama  
 Department of Marketing and Transportation  
 Mr. Richard Mathisen  
 Mobile, Alabama 36688  
 (205) 460-6411

California

University of California - Berkeley  
 Institute of Transportation/Traffic Engineering  
 Mr. John Schremp  
 109 McLaughlin Hall  
 Berkeley, California 94720  
 (415) 642-7350

Golden Gate University  
 Transportation Program  
 Mr. Korth  
 536 Mission Street  
 San Francisco, California 94105  
 (415) 391-7800 ext. 279

Louisiana

Louisiana State University  
 Nuclear Science Center  
 Agricultural/Mechanical Center  
 Dr. Curry  
 Baton Rouge, Louisiana 70803  
 (504) 388-2163

Michigan

Michigan State University  
 School of Packaging  
 Dr. Hugh Lockhart  
 East Lansing, Michigan  
 (517) 353-6462

New York

Franklin D. Roosevelt  
 Institute of Maritime Studies  
 Mr. Ron Bohn  
 15 State Street  
 New York, New York 10004

Suffolk County Comm. College  
 Mr. Joseph E. Galvin  
 533 College Road  
 Selden, New York 11784  
 (516) 233-5277

Syracuse University  
 School of Marketing/Transport  
 The Franklin Program  
 Dr. Theodore O. Wallin  
 129 College Place  
 Syracuse, New York 12310  
 (315) 423-2916

Colorado

Metropolitan State College  
 School of Professional Studies  
 Mr. William B. Rourke, Jr.  
 1006 11th Street, Box 30  
 Denver, Colorado 80204  
 (303) 629-8310

University of Niagara  
 Institute of Transportation  
 Travel and Tourism  
 Dr. Samuel I. Porroth  
 Buffalo, New York 14109  
 (716) 285-1212 ext. 311

Connecticut

Norwalk Community College  
 Department of General Business  
 Mr. Milton Goldstein  
 333 Wilson Avenue  
 Norwalk, Connecticut 06854  
 (203) 853-2040

Ohio

Ohio State University  
 Continuing Education  
 Columbus, Ohio 43210  
 (614) 422-1311

Florida

Florida International University  
 School of Business  
 Mr. J. A. F. Nicholes  
 SBOS-DM346  
 Miami, Florida 33199  
 (305) 522-2571

University of Cincinnati  
 Evening College  
 Mr. Kenneth Dickens  
 Cincinnati, Ohio 45221  
 (513) 475-4431

Miami - Dade Community College  
 South Campus, Aviation Department  
 Mr. Kane  
 11011 SW 104th  
 Miami, Florida 33156  
 (305) 596-1154

Utah

LDS Business College  
 Special Courses and Conference  
 Mr. Ross Derbridge  
 411 East South Temple  
 Salt Lake City, Utah 84111  
 (801) 363-2765

Florida Junior College  
 Kent Campus  
 Transportation Department  
 Mr. Paul A. Halloran  
 Jacksonville, Florida 32205  
 (904) 387-8167

Washington

Seattle Community College  
 Business and Commerce Division  
 Mr. Phil Running  
 9600 College Way, North  
 Seattle, Washington 98103  
 (206) 634-4436

University of Miami  
Ryder Program and Transportation  
Dr. Anthony Cantanese  
1541 Brescia  
Miami, Florida 33144  
(305) 284-2901

#### Iowa

Iowa State University  
Department of Environmental Health and Safety  
Industrial Education  
Dr. Jack Beno  
Building 208-C  
Ames, Iowa 50010

Northern Iowa Area Community College  
Department of Trade and Industry  
Mr. Ted Crawford  
500 College Avenue  
Mason City, Iowa 50401  
(515) 421-4355

#### Kansas

University of Kansas  
Radiation Safety Office  
Dr. Friesen  
Lawrence, Kansas 66045  
(913) 864-4089

#### Wisconsin

Northeast Wisconsin Tech. Ins.  
Dept. of Marketing/Business  
Mr. E. R. DeRoche  
2740 West Mason Street  
Green Bay, Wisconsin 54303  
(414) 423-3125

Univ. of Wisconsin - Stout  
Department of Packaging  
Mr. Marvin Kufahl  
Menomonee, Wisconsin 54751  
(715) 232-2295

## Colleges and Other Institutes Offering Hazardous Materials Courses

Alabama

Alexander City State Junior College  
Fire Science Department  
Paul Blackwell  
Cherokee Road  
P.O. Box 699  
Alexander City, Alabama 35010  
(205) 234-6346

George C. Wallace  
State Community College  
Fire Science Department  
Michael Houghland  
P. O. Drawer 1049  
Selma, Alabama 36701  
(205) 875-2634, Ext. 31

Alaska

Anchorage Community College  
Fire Science Program  
James Evans  
2455 Providence Drive  
Anchorage, Alaska 99504  
(907) 279-6602

Arizona

Arizona College of Technology  
Fire Science Department  
William Buttery  
Route 97  
Winicelman, Arizona 85292  
(602) 356-7864

Cochise College  
Sierra Vista Campus  
Fire Science Department  
Richard Seals  
901 Columbo  
Sierra Vista, Arizona 85635  
(602) 934-2211

Glendale Community College  
Fire Science Department  
Renault Catalano  
600 West Oliver Avenue  
Glendale, Arizona 85301  
(602) 934-2211

Cochise College  
Douglas Campus  
Fire Science Department  
Richard Seals  
Douglas Arizona 85607  
(602) 364-7943

Eastern Arizona College  
Fire Science Department  
Ralph Orr  
Thatcher, Arizona 85552  
(602) 428-1133

Pima Community College  
Fire Science Department  
Ignacio Garcia  
2202 West Anklam Road  
Tucson, Arizona 85709  
(602) 884-6693

Mohave Community College  
 Vincent Salmon  
 1971 Lagerson Avenue  
 Kingman, Arizona 86401  
 (602) 757-4331

Scottsdale Community College  
 Fire Science Department  
 Ed Gates  
 9000 East Chaparral Road  
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### California

Allan Hancock College  
 Fire Science Department  
 Robert Pile  
 800 S. College Drive  
 Santa Maria, California 93454  
 (805) 922-6966

American River College  
 Placerville Campus  
 Fire Science Department  
 Art Scott  
 106 Placerville Drive  
 Placerville, California 95667  
 (916) 622-7575

Bakersfield College  
 Fire Science Department  
 Joseph Angelo  
 2101 K Street Mall  
 Bakersfield, California 93305  
 (805) 395-4481

Butte College  
 Fire Science Department  
 Fred Allen  
 Route 1 Box 183A  
 Oroville, California 95965  
 (916) 895-2401

Phoenix College  
 Fire Science Department  
 Robert F. Noll  
 1202 West Thomas Road  
 Phoenix, Arizona 85013  
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American River College  
 Fire Science Department  
 Louis Quint  
 4700 College Oak Drive  
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Antelope Valley College  
 Fire Science Department  
 Frank C. Roberts  
 3041 West Avenue K  
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Barstow College  
 Fire Science Department  
 Jack Sherman  
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 Barstow, California 92311  
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Cabrillo College  
 Fire Science Department  
 David Barbin  
 6500 Soquel Drive  
 Aptos California 95003  
 (408) 425-6447

Cerro Coso Community College  
Fire Science Department  
James Sirman  
Ridgecrest, California 93555  
(714) 375-5001

Chaffey College  
Fire Science Department  
Eddie Smith  
5885 Haven Avenue  
Alta Loma, California 91701  
(714) 987-1737

Cosumnes River College  
Fire Science Department  
Cecie Fontanoza  
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College of the Desert  
Fire Science Department  
Bill Kroonen  
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Palm Desert, California 92260  
(714) 346-8041

El Camino College  
Fire Science Department  
Ed Muraski  
16007 Crenshaw Blvd.  
Van Torrance, California 90506  
(213) 532-3670

Glendale College  
Fire Science Department  
Dave Leek  
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Glendale, California 91208  
(213) 240-1000

Chabot College  
Fire Science Department  
Glenn Bass  
25555 Hesperian Blvd.  
Hayward, California 94545  
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Columbia Junior College  
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Cuesta College  
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Edwin M. Pearce  
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East Los Angeles College  
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Fresno City College  
Fire Science Department  
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Grossmont College  
Fire Science Department  
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32  
Hartnell College  
Fire Science Department  
Thomas C. Campbell  
156 Homestead Avenue  
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(408) 758-7261

Indian Valley Colleges  
Fire Science Department  
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Navato, California 94947  
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Long Beach City College  
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Denny Pace  
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Los Angeles Harbor College  
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Los Medanos College  
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Merced College  
Fire Science Department  
Lee McCabe  
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(209) 723-4321, x282

Imperial Valley College  
Fire Science Department  
W. D. Rudolph  
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Lake Tahoe Community College  
Fire Science Department  
Jim Leavitt  
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Stanley Schall  
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Los Angeles, California 90029  
(213) 663-9141, x207

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George Yochum  
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College of Marin  
Fire Science Department  
Joseph E. Berruezo  
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Merit College  
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Oakland, California 94619  
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Miramar College  
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R. H. Rossmassler  
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Monterey Peninsula College  
Fire Science Department  
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Monterey, California 93940  
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Mt. San Jacinto College  
Fire Science Department  
Benton Caldwell  
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San Jacinto, California 92383  
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Oxnard College  
Fire Science Department  
John Dell  
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Pasadena City College  
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College of Redwoods  
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Don Peterson  
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Modesto Junior College  
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San Marcos, California 92069  
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Com. College of Denver, Redrocks  
Fire Science Department  
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Golden, Colorado 80401  
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Connecticut

State Tech Colleges of Connecticut  
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Hartford, Connecticut 06106  
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West Haven, Connecticut 06516  
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Delaware Tech & Com. Col., Kent  
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Jacksonville Fire Academy  
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Jacksonville, Florida 32204  
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Seminole Community College  
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Valencia Community College  
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Rudolph During  
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Orlando, Florida 32802  
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Morrow, Georgia 30260  
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Indian River Community College  
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Fort Pierce, Florida 33450  
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Palm Beach Junior College  
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Lake Worth, Florida 33460  
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St. Petersburg Junior College  
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(813) 546-0011, x442

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Hawaii

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General Education and Public Service  
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Idaho

Boise State University  
Fire Service Training  
Mr. Tom Tyree  
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Illinois

Black Hawk College  
Fire Science Department  
Mr. Simon Roberts  
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Moline, Illinois 61265  
(309) 796-1311

College of DuPage  
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Elgin Community College  
Fire Science Department  
1700 Spartan Drive  
Elgin, Illinois 60120  
(312) 697-1000

Carl Sandburg Community College  
Mr. William D. Masters  
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Galesburg, Illinois 61401  
(309) 344-2518

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Fire Science Department  
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East St. Louis, Illinois 62201  
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Illinois Central College  
Fire Science Department  
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Illinois Institute of Technology  
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Chicago, Illinois 60616  
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Kishwaukee College  
Fire Science Department  
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Malta Road  
Malta, Illinois 60150  
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Lewis & Clark Community College  
Fire Science Department  
Mr. R. H. Patterson  
Godfrey, Illinois 62035  
(618) 466-3411

Moraine Valley Community College  
Fire Science Department  
Mr. Art Stoike  
10900 S. 88th Avenue  
Palos Hills, Illinois 60465  
(312) 974-4300

Parkland College  
Fire Science Department  
Mr. Fred Johnson  
2400 W. Bradley Avenue  
Champaign, Illinois 61820  
(217) 351-2200

Rock Valley College  
Fire Science Department  
Mr. Carl Cascio  
301 N. Mulford Road  
Rockford, Illinois 61101  
(815) 226-3704

Joliet Junior College  
Fire Science Department  
Mr. Lawrence Walsh  
1216 Houbolt Avenue  
Joliet, Illinois 60436  
(815) 729-9020

College of Lake County  
Fire Science Department  
Mr. John Shelton  
19351 W. Washington Street  
Grayslake, Illinois 60030  
(312) 223-6601

Lincoln Land Community College  
Fire Science Department  
Mr. O. R. Vanderwater  
Shepherd Road  
Springfield, Illinois 62700  
(217) 786-2269

Oakton Community College  
Fire Science Department  
Mr. F. Salzberg  
7900 N. Nagle Avenue  
Morton Grove, Illinois 60053  
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Prairie State College  
Fire Science Department  
Mr. Eddie O'Connor  
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Chicago Heights, Illinois 20411  
(312) 782-5965

Sauk Valley College  
Fire Science Department  
Mr. A. R. Crowe  
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Triton College  
Fire Science Department  
Mr. Leo E. Flynn  
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River Grove, Illinois 60171  
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Police Training Institute  
University of Illinois Continuing Education  
Mr. Clifford Van Meter  
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Champaign, Illinois 61820  
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Fire Service Institute  
University of Illinois  
Mr. Gerald Monigold  
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#### Indiana

Indiana Vocational Technical College  
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South Bend, Indiana 46619  
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Kirkwood Community College  
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Mr. Donald Fuller  
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William R. Harper College  
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Mr. Charles Henrici  
Algonquin & Roselle Roads  
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City of Naperville  
Fire Prevention Bureau  
Captain William Kuhrt  
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Iowa State University  
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Western Kentucky University  
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University of Maryland  
Fire and Rescue Institute  
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University of Maryland  
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Massachusetts

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University of Maryland  
Fire Protection Engineering  
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Mr. Robert Sherman  
77 Ellsbree Street  
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Cape Cod Community College  
Fire Sciences Department  
Mr. Robert Tucker  
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13  
Massasoit Community College  
Fire Science Tech Department  
Professor Phillip E. Blye  
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#### Montana

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#### Nebraska

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Thomas Dawson  
Prescott Hill - Route 106  
Laconia, New Hampshire 03246  
(603) 524-3207

Lily Pond Fire School  
Lakes Region Mutual Fire Aid  
Association  
Edward Warfield  
64 Court Street  
Laconia, New Hampshire 03246  
(603) 624-2386

New Jersey

Atlantic Community College  
Fire Science Department  
Mr. E. J. Fottrell  
Mays Landing, New Jersey 08330  
(609) 625-1111, Ext. 243

Bergen Community College  
Fire Science Department  
Mr. Horace Chandler  
400 Paramus Road  
Paramus, New Jersey 07652  
(201) 447-1500

Camden County College  
Fire Science Department  
John Tenbrook  
P. O. Box 200  
Blackwood, New Jersey 08012  
(609) 227-7200

Essex County College  
Fire Science Department  
Charles Lowollo  
31 Clinton Street  
Newark, New Jersey 07102  
(201) 877-3000

Jersey City State College  
Fire Science Department  
2039 Kennedy Blvd.  
Jersey City, New Jersey 07305  
(201) 547-3311

Mercer County College  
Fire Science Department  
Al Porter  
1200 Old Trenton Road  
Trenton, New Jersey 08690  
(609) 586-4800

Passaic County Community College  
Fire Science Department  
Mark H. Schaffer  
170 Patterson Street  
Paterson, New Jersey 07505  
(201) 279-500

Somerset County College  
Fire Science Department  
Carol Murtaugh  
P. O. Box 3300  
Somerville, New Jersey 08876  
(201) 526-1200

#### New Mexico

University of Albuquerque  
Fire Science Department  
Dr. Stevenson  
St. Joseph Place  
Albuquerque, New Mexico 87106  
(505) 831-1111, Ext. 330

#### New York

Broome Community College  
Continuing Education  
Fire Protection Program  
Ogden Clark  
P. O. Box 1017  
Binghamton, New York 13902  
(607) 772-5005

Central Texas College  
Overseas Europe  
Fire Protection Technology  
Hanau  
APO New York, New York 09165

John J. College of Criminal Justice  
Fire Science Department  
Richard Abbott  
445 West 49th Street  
New York, New York 10019  
(212) 489-5183

Monroe Community College  
Fire Science Department  
John T. Maher  
1000 East Henrietta Road  
Rochester, New York 14600  
(716) 442-9950

Onondaga Community College  
Fire Science Department  
Mr. Larry Linch  
700 East Water Street  
Syracuse, New York 13215  
(315) 469-7741, Ext. 5225

Rockland Community College  
Fire Science Department  
Thomas Goldrick  
145 College Road  
Suffern, New York 10901  
(914) 356-4650

Schenectady County Community College  
Fire Science Department  
Irma R. Chestnut  
Washington Avenue  
Schenectady, New York 12305  
(518) 346-6211

Suffolk County Vocational  
Education and Extension Board  
Fire Science Training  
P. O. Box 128  
Yaphank, New York 11980  
(516) 265-7269

Westchester Community College  
 Fire Science Department  
 Charles Crowley  
 75 Grasslands Road  
 Valhalla, New York 10595  
 (914) 347-6800

#### North Carolina

Central Piedmont Community College  
 Fire Science Department  
 George W. Wright  
 Elizabeth Avenue at N. King's Drive  
 Charlotte, North Carolina 28204  
 (704) 373-6705

Forsyth Technical Institute  
 Fire Science Department  
 Larry Weaver  
 2100 Silas Creek Parkway  
 Winston - Salem, North Carolina 27103  
 (919) 723-0371

Richmond Technical Institute  
 Fire Science Department  
 Richard McIntyre  
 P. O. Box 1189  
 Hamlet, North Carolina 28345  
 (919) 582-1980

James Sprunt Technical Institute  
 Fire Science Department  
 Emmel Coggins  
 P. O. Box 398  
 Kenansville, North Carolina 28349  
 (919) 296-1341

Western Piedmont Community College  
 Fire Science Department  
 Mr. Jerry Rowland  
 1001 Burkemont Avenue  
 Morgantown, North Carolina 28655  
 (704) 437-8688

Durham Technical Institute  
 Fire Science Department  
 Joseph Wade  
 1637 Lawson Street  
 Durham, North Carolina 27703  
 (912) 596-9311

Guilford Technical Institute  
 Fire Science Department  
 Harold J. Fegan  
 P. O. Box 309  
 Jamestown, North Carolina 27282  
 (919) 292-1101

Rowan Technical Institute  
 Fire Science Department  
 Mr. Larry Gibson  
 P. O. Box 1595  
 Salisbury, North Carolina 28144  
 (704) 637-0760, Ext. 46

Technical Institute of Alamance  
 Fire Science Department  
 Jerry Harris  
 411 Camp Road  
 Burlington, N. C. 27215  
 (919) 578-2002

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North Dakota

North Dakota Fireman's Association  
D. E. Gilman  
Beach, North Dakota 58621  
(701) 872-4392

Ohio

University of Akron  
Fire Science Department  
Mr. Harrington  
302 E. Buchtel Avenue  
Akron, Ohio 44325  
(216) 375-7906

Columbus Technical Institute  
Fire Science Department  
Mr. Glenn Clark  
550 E Spring Street  
Columbus, Ohio 43215  
(614) 221-6743

Hocking Technical College  
Fire Science Department  
William Hennesstfle  
Rt. 1  
Nelsonville, Ohio 45764  
(614) 753-3591

Ohio State Fireman's  
Training Academy  
Tina Hazlett  
8895 E Main Street  
Reynoldsburg, Ohio 43068  
(614) 864-5510

Stark Technical College  
Fire Science Department  
Joseph L. Hafer  
6200 Frank Avenue, NW  
Canton, Ohio 44720  
(216) 994-6170

University of Cincinnati  
Fire Protection  
D. F. Pinger  
100 E Central Parkway  
Cincinnati, Ohio 45210  
(513) 475-6567

Cuyahoga Community College  
Fire Science Department  
Fred C. Sutton  
2900 Community College Avenue  
Cleveland, Ohio 44115  
(216) 241-5966

Lorain County Community College  
Fire Science Department  
Mr. Walter McGreedy  
1005 N Abbe Road  
Elgin, Ohio 44035  
(216) 365-4191

Owens Technical College  
Fire Science Department  
William Russell  
30335 Oregon Road  
Perryburg, Ohio 43551  
(419) 666-0580



Oklahoma

Oklahoma State Tech Institute  
Fire Science Department  
Bob Mowles  
900 N Portland  
Oklahoma City, Oklahoma 73107  
(405) 947-0771

Oklahoma State University  
Fire Science Department  
Mr. Dale Janes  
Stillwater, Oklahoma 74074  
(405) 624-5000

Tulsa Junior College  
Fire Science Department  
Mr. McElyea  
909 S Boston  
Tulsa, Oklahoma 74119  
(918) 587-6561, Ext. 175

Western Oklahoma State College  
Fire Science Department  
Mr. Cecil Chesser  
2801 N Main  
Altus, Oklahoma 73521  
(405) 477-2000

Oregon

Chemeketa Community College  
Fire Science Department  
Cecil Dill  
P. O. Box 14007  
Salem, Oregon 97309  
(503) 399-5163

Clackamas Community College  
Fire Science Department  
Durwood Thomas  
19600 South Molalla Avenue  
Oregon City, Oregon 97045  
(503) 656-2631

Portland Community College  
Fire Science Department  
John Koroloff  
12005 West 49th Avenue  
Portland, Oregon 97219  
(503) 244-6111

Rogue Community College  
Fire Science Department  
Mr. Mark Burns  
3345 Redwood Highway  
Grants Pass, Oregon 97526  
(503) 579-5541

Pennsylvania

Butler County Fire Chiefs Association  
Butler County Fire School  
John Stokes  
124 West North Street  
Butler, Pennsylvania 16001  
(412) 382-4200

Delaware County Community  
College  
Fire Academy  
Walter Omlor  
Media, Pennsylvania 19063  
(215) 353-5400, Ext. 427

Northampton County Area Community College  
 Fire Science Department  
 Regina Tauke  
 3835 Green Pond Road  
 Bethlehem, Pennsylvania 18017  
 (215) 865-5351

Pennsylvania State University  
 Fire Science Department  
 Charles R. Meck  
 209 Keller Building  
 University Park, Pennsylvania  
 16802

Community College of Philadelphia  
 Fire Science Department  
 Paul Ruhne  
 1600 Spring Garden Street  
 Philadelphia, Pennsylvania 19130  
 (215) 972-7436

#### Rhode Island

Providence College  
 Fire Science Department  
 Roger L. Pearson  
 River and Eaton Streets  
 Providence, Rhode Island 02918  
 (401) 865-1000

Rhode Island Junior College  
 Fire Science Department  
 John Marmaras  
 400 East Avenue  
 Warwick, Rhode Island 02886  
 (401) 825-2145

#### South Carolina

Midlands Technical College  
 Fire Science Department  
 P. O. Drawer Q  
 Columbia, South Carolina 29250

South Carolina Fire Academy  
 Paul W. Risher, Jr.  
 Illinois Avenue  
 West Columbia, South Carolina  
 29169  
 (803) 758-8420

#### South Dakota

Fire Services Training  
 Jim Slippin  
 222 West Pleasant Drive  
 Pierre, South Dakota 57501  
 (605) 773-3876

Tennessee

Chattanooga State Technical Community College  
Fire Science Department  
Leslie Owen  
4501 Amnicola Highway  
Chattanooga, Tennessee 37406  
(615) 622-6262

Shelby State Community College  
Fire Science Department  
Clem Weinrich  
P. O. Box 22026  
Memphis, Tennessee 28122  
(901) 382-0504

Walter State Community College  
Fire Science Department  
Ronald Lemke  
Morristown, Tennessee 37814  
(615) 581-2121

Roane State Community College  
Fire Science Department  
William C. Marshals  
Harriman, Tennessee 37748  
(615) 354-3000

University of Tennessee  
Fire Science Department  
Mike Solecki  
Charlotte Avenue  
Nashville, Tennessee 37219  
(615) 251-1341

Texas

Del Mar College  
Fire Science Department  
E. E. Walters  
Baldwin at Ayers  
Corpus Christi, Texas 48404  
(512) 881-6425

Galveston College  
Fire Science Department  
James Frazier  
4015 Avenue "Q"  
Galveston, Texas 77550  
(713) 763-2661

Odessa College  
Fire Science Department  
Mr. O. Nordmarken  
P. O. Box 3752  
Odessa, Texas 79760  
(915) 337-5381, Ext. 238

El Paso Community College  
Fire Science Department  
Gerald B. Money  
6601 Dyer Street  
El Paso, Texas 79904  
(915) 778-7117

Midland College  
Fire Science Department  
Mr. Mil Goodwin  
3600 N Garfield  
Midland, Texas 79701  
(915) 684-7851

San Antonio College  
Fire Science Department  
Mike Pickett  
1300 San Pedro  
San Antonio, Texas 78284  
(512) 734-7311, Ext. 209

South Plains College  
Fire Science Department  
Mr. B. P. Robinson  
2404 Avenue "Q"  
Lubbock, Texas 79405  
(806) 747-0576

Texas A & M University System  
Engineering Extension Service  
Fire Protection Training Service  
David White  
F. E. Drawer K  
College Station, Texas 77843

Texarkana Community College  
Social Science Division  
Bob Bell  
2500 N Robinson Road  
Texarkana, Texas 75501  
(214) 838-4541

#### Utah

Utah Technical College - Provo  
Fire Science Department  
Mr. G. D. Evans  
1395 North 150 East  
Provo, Utah 84601

#### Vermont

Southeastern Vermont  
Emergency School  
Fire Science Department  
Mark B. Rivers, Director  
P. O. Box 44  
Brattleboro, Vermont 05301

#### Virginia

George Mason University  
John M. Smith  
4400 University Drive  
Fairfax, Virginia 22030  
(703) 323-2405

Temple Junior College  
Fire Science Department  
Mr. S. W. Churchill  
2600 South First Street  
Temple, Texas 76501  
(817) -73-9961, Ext. 51

Tyler Junior College  
Fire Science Department  
R. T. Minter  
Henderson Highway  
Tyler, Texas 75701  
(214) 593-4401

Vermont Fire Fighter's  
Association  
Walter Read  
East Dorset, Vermont 05253  
(802) 362-1369

J. Sargent Reynolds Community Dr.  
College  
Fire Science Department  
George Kitchen  
P. O. Box 12084  
Richmond, Virginia 23241  
(804) 264-3301

West Virginia Northern Community College  
Fire Science Department  
Richard Sambuco  
Wheeling, West Virginia 26003  
(304) 233-4900

West Virginia State College  
Fire Protection Technology  
Mr. Gwinn  
Institute, West Virginia 25112  
(304) 766-3192

#### Wisconsin

Fox Valley Technical Institute  
Fire Science Department  
Charles Bavry  
P. O. Box 2277  
Appleton, Wisconsin 54911  
(414) 739-8831

Gateway Technical Institute  
Fire Science Department  
Dr. Nevala  
3520 30th Avenue  
Kenosha, Wisconsin 53141  
(414) 656-6900

Milwaukee Area Tech College  
Fire Science Department  
Robert L. Wolf  
1015 North 6th Street  
Milwaukee, Wisconsin 53203  
(414) 278-6428

Moraine Park Tech Institute  
Fire Service Training  
Bob Bruce  
235 N National  
Fond du Lac, Wisconsin 54935  
(414) 922-8611, Ext. 413

Northeast Wisconsin Tech Institute  
Service Department  
William T. Schmidt  
2740 West Mason Street  
Green Bay, Wisconsin 54303  
(414) 497-3003

Southwest Wisconsin Vo-Tech Fire  
Institute  
Fire Service Department  
Don Covert  
Bronson Blvd.  
Fennimore, Wisconsin 53809

#### Wyoming

University of Wyoming  
Fire Science Department  
Dr. E. G. Meyer  
Laramie, Wyoming 82071

Northern Virginia Community College  
Fire Science Department  
Robert L. Smith  
8333 Little River Turnpike  
Annandale, Virginia 22003  
(703) 323-3253

• Washington

L. H. Bates Vocational Tech Institute  
Fire Science Department  
J. F. Wilbert  
1101 S. Yakima  
Tacoma, Washington 98405  
(206) 597-7257

Commission for Vocational Education  
Fire Service Training  
Edward Prendergast  
Airdustrial Park, Bldg. 17, LS-10  
Olympia, Washington 98504

Whatcom Community College  
Fire Science Department  
Barbara Merriman  
5217 Northwest Road  
Bellingham, Washington 98225  
(206) 676-2170

West Virginia

Community College of Marshall University  
Fire Science Technology Program  
Larry Artrip  
Huntington, West Virginia 25701  
(304) 696-3646

Parkersburg Community College  
Fire Science Department  
Pat Alford  
Parkersburg, West Virginia 26101  
• (304) 424-8290

Tidewater Community College  
Fire Science Department  
Mr. A. B. Corley  
1700 College Crescent  
Virginia Beach, Virginia 23456  
(804) 427-3070

Columbia Basin College  
Fire Science Department  
2600 N 20th Avenue  
Pasco, Washington 99301  
(509) 547-0511

Edmonds Community College  
Fire Science Department  
Gary Isham  
Lynnwood, Washington 98036

Yakima Valley College  
Fire Science Department  
P. O. Box 1647  
Yakima, Washington 98907

Fairmont State College  
Community College  
Fire Science Program  
Jack Clayton  
Fairmont, West Virginia 26554  
(304) 367-4000

Shepherd College  
Fire Science and Safety  
Tech  
Dr. Howard Carper  
Shepherdstown, West Virginia  
25443  
(304) 876-2511, Ext. 275

## FEDERAL, STATE AND LOCAL GOVERNMENT AGENCIES OFFERING COURSES AND SEMINARS

The California Specialized Training Institute  
Louis O. Giuffrida  
Building 904, Camp San Luis Obispo  
San Luis Obispo, California 93406  
(850) 544-7100

Maryland Department of Transportation  
State Aviation Administration  
3rd, Floor Terminal Building  
Baltimore - Washington International Airport  
Baltimore, Maryland 21240  
(301) 787-7086

Naval School Transportation Management  
Commanding Officer  
ATTN: Quota Control  
Oakland, California 94625  
(415) 466-5969

Port Authority of New York and New Jersey  
Eunice C. Coleman  
The World Trade Institute  
1 World Trade Center - 55 FL  
New York, New York 10048  
(212) 466-3170

Ammunition School  
DARCUM Ammunition Center  
ATTN: SARAC-ASA  
Savannah, Illinois 61074  
(815) 273-8000

Joint Military Packaging Training Center  
Ms. Elsie M. Clark  
ATTN: DRXPT-A  
Aberdeen Proving Grounds; MD 21005  
(301) 278-5185

Colorado Training Institute  
1001 East 62nd Avenue  
Denver, Colorado  
(303) 289-4891

Multnomah County  
Office of Emergency Management  
Myra Lee  
12240 NE Glisan  
Portland, Oregon 97230  
(503) 255-3600

Sheppard Air Force Base  
ATTN: STTC/TTGXT  
William Speights  
Sheppard AFB, Texas 76311  
(817) 851-2075

State of North Carolina  
Department of Insurance  
Dawson Nethercutt  
Fire and Rescue Services  
Division  
Raleigh, North Carolina 27611  
(919) 733-2142

Department of Transportation  
Transportation Safety  
Institute  
Mr. Gary Groman  
Oklahoma City, Oklahoma 73125  
(405) 686-4824

Academy of Advanced Traffic  
Anthony Matero  
One World Trade Center  
New York, New York 10047  
(212) 466-1980

## CORPORATIONS AND OTHER BUSINESS WHICH OFFER COURSES

Academy of Advanced Transportation  
Lee Thomas  
One East Penn Square Building  
Market and Juniper Streets  
Philadelphia, Pennsylvania 19107  
(215) 563-3061

J. T. Baker  
Carol Morris  
222 Red School Lane  
Phillipsburg, New Jersey 08865  
(201) 859-2151

Chemical Manufacturers Association  
John Zercher  
1825 Connecticut Avenue  
Washington, DC 20009  
(202) 328-4218

Dean Allard and Associates  
Dean E. Allard, Sr.  
P. O. Box 3128  
Lynnwood, Washington 98036  
(206) 771-1711

Federal Express  
Rick Finney  
P. O. Box 30167  
Memphis, Tennessee 38130  
(800) 238-5592

J. J. Keller & Associates, Inc.  
Joe Nemecek  
145 W. Wisconsin Avenue  
Neenah, Wisconsin 54956  
(414) 722-2848

National Fire Protection Assoc.  
Education Technology Unit  
470 Atlantic Avenue  
Boston, Massachusetts 02210  
(617) 482-8755

Ashland Chemical Co.  
Walt Schneider  
P. O. Box 2219  
Columbus, Ohio 43216  
(614) 889-3061

Center for Professional  
Advancement  
Talia Catering  
P. O. Box H  
East Brunswick, New Jersey  
08816  
(201) 249-1400, Ext. 200

Conrail  
B. L. Swieringa  
No. 6, Penn Center, Rm. 315  
Philadelphia, Pennsylvania 19104  
(215) 977-4559

ENSAFE  
Environmental and Safety Design  
Wendall Knight  
P. O. box 34207  
Memphis, Tennessee 38134  
(901) 372-7692

Flying Tiger Line  
Alan Hollander  
Safety Department HO8  
7401 World Way West  
Los Angeles, California 90009  
(213) 642-4082

Lyon Technology, Inc.  
William P. Taggart  
466 Mount Hope Avenue  
Dover, New Jersey 07801  
(201) 366-3200

Medical Services, Inc.  
Brad Childs  
2100 West 11th Avenue  
P. O. box 2446  
Eugene, Oregon 97402  
(502) 485-2121



Operations Council  
American Trucking Assoc., Inc.  
Mr. Brent Grimes  
1616 P. Street, NW  
Washington, D. C. 20036  
(202) 797-4537

Radiation Service Organization  
Mr. Daniel Caulk  
P.O. Box 419  
Laurel, MD 20810  
(301) 792-7444  
(301) 953-2484 (Washington, D.C.)

Safety Systems, Inc.  
Mr. Ronald G. Gore  
P.O. Box 8463  
Jacksonville, Florida 32211  
(904) 725-3044

Seaboard Coast Line  
Industries, Inc.  
Mr. Peter Gill, Manager  
Hazardous Materials Control  
500 Water Street  
Jacksonville, Florida 32202  
(904) 359-3587

Southern Pacific Trans. Co.  
Mr. Robert Andre  
One Market Street  
San Francisco, California 94015  
(415) 362-1212, Ext. 21563

Traffic and Distribution  
Services, Inc.  
Mr. Samuel L. Watts  
1050 Waltham Street  
Lexington, MA 02177  
(617) 861-1830

Training Services, Inc.  
Mr. Leonard J. Smith  
130 Orient Way  
Rutherford, New Jersey 07070  
(201) 933-5880

Transportation Skills Program  
Mr. Robert J. Keegan  
320 W. Main Street  
Kutztown, Pennsylvania 19530  
(215) 683-5098

UNZ and Company  
Mr. Fred Neuman  
190 Baldwin Avenue  
Jersey City, New Jersey 07306  
(800) 631-3098  
(201) 795-5400 NJ

Wein Air Alaska, Inc.  
Marketing Training Dept.  
Mr. Thomas L. Kenney  
4100 International Airport Road  
Anchorage, Alaska 99504  
(907) 266-3608/3609

NOTE: The Organizations above offer both courses and seminars. Contact those organizations for scheduling and other details.

E. I. Dupont de Nemours  
and Co., Inc.  
Dr. Arthur C. Santora  
Applied Technology Division  
Clayton Building, Concord Place  
Wilmington, Delaware 19898  
(302) 772-5998

National Agricultural  
Chemicals Association  
Director of Communications  
Department of Communications  
1155 Fifteenth Street, NW  
Washington, D. C. 20005  
(202) 296-1585

Video Systems Network, Inc.  
Mr. Jerry Meisel, Regional Manager  
12530 Beatrice Street  
Los Angeles, California 90066  
(213) 871-0677  
800-421-6521

NOTE: The Organizations listed above offer training materials only.

0696F

Hazardous Materials Management System  
A Guide for Local Emergency Managers  
Unclassified  
Multnomah County Office of Emergency Management  
July, 1981  
99 Pages  
Contract No. DCPA 01-79-C-0323 Work Unit No. 452IE

Purpose

The purpose for the development of this handbook is to provide a tangible guide to the local emergency manager for the development and implementation of a comprehensive system approach for dealing with hazardous materials incidents within a specific geographic area. It was written from the perspective that such a system is multi-disciplinary in nature and therefore it is essential that those involved identify, understand, and accept their individual roles within the concept of a team effort. The role of the local emergency manager is that of directing and coordinating developmental activities, monitoring the implementation of the system, and subsequently to, test and evaluate its progress. The roles of initial response, clean up, investigation, and regulatory enforcement are most appropriately handled by the public and private agencies with the technical expertise and mandated authority to do so.

Hazardous Materials Management System  
A Guide for Local Emergency Managers  
Unclassified  
Multnomah County Office of Emergency Management  
July, 1981  
99 Pages  
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